Hand Cannons

The World's Most Powerful Handguns

Duncan Long

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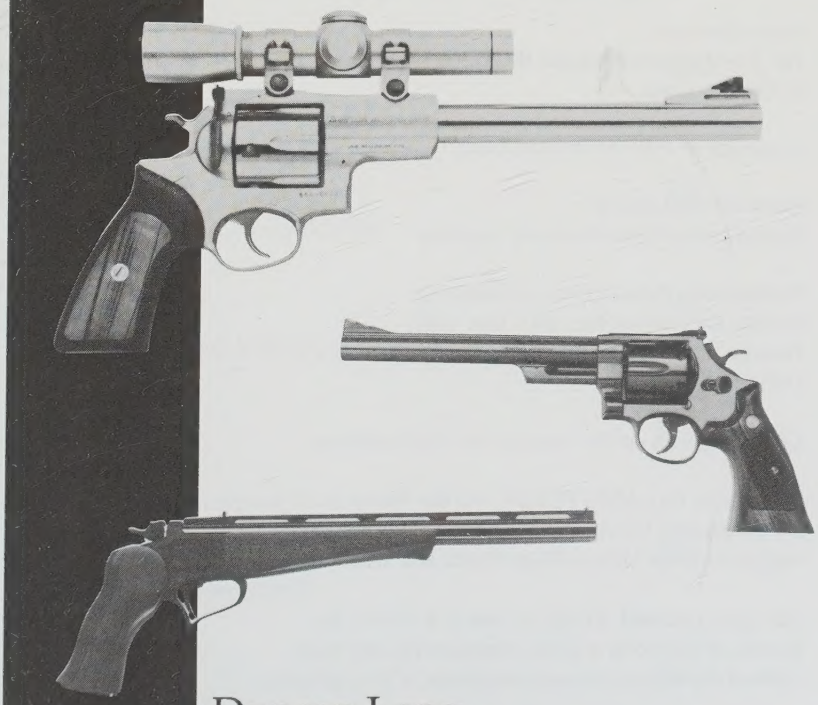

Duncan Long

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Hand Cannons:
The World's Most Powerful Handguns
by Duncan Long

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WARNING

TECHNICAL DATA PRESENTED HERE, PARTICULARLY technical data on ammunition and the use, adjustment, and/or alteration of firearms, inevitably reflects the author's individual beliefs and experience with particular firearms, equipment, and components under specific circumstances which the reader cannot duplicate exactly. The information in this book should therefore be used for guidance only and approached with great caution. Neither the author nor the publisher assumes any responsibility for the use or misuse of information contained in this book. It is presented *for academic study only.*

What's a Hand Cannon?

INTRODUCTION

THE FIRST FIREARMS WERE UNDOUBTEDLY CLUMSY contraptions. Who created the first firearm and when and where it was constructed have been lost in history. But there can be little doubt that the first trend in firearms was toward large field pieces capable of battering down city walls. Even today, the word "gun" can mean anything from a huge cannon down to a tiny pistol.

When hand-held firearms finally appeared on the battlefield, they lacked the precision machining required for accuracy and were undoubtedly low-powered devices. The time taken in reloading them as well as their tendency to malfunction, especially in damp weather, necessitated incorporating guns into the handles of knives or maces, giving the user a fall-back weapon if his single shot missed its mark. For a long time, hand-held firearms were more of a curiosity than a practical weapon, an item of gadgety status in the barracks rather than a utilitarian device on the battlefield.

Linguists suggest that the word "pistol" originally meant "pipe." This suggests that the first hand guns were little more than short pieces of pipe with ignition

systems and were quite possibly devoid of anything other than a rudimentary grip. Such guns were most likely useful only as last-ditch weapons capable of creating enough noise and smoke to permit escape even if an enemy were missed by the single barrage launched by the weapon.

As hand-carried firearms became more effective, the need for compact but powerful guns for troops or travelers on horseback became apparent. After all, it was tough enough to maintain a place in the saddle during combat without having both hands occupied with a firearm. Handguns that have short barrels for easy maneuverability and are light enough to permit one-hand firing quickly became popular among horsemen, who often carried pistols in double saddle holsters ready for instant use.

The German *Ritters* are generally recognized as the first soldiers to use such weapons. These horsemen employed wheel-lock pistols to good effect against the French in the Battle of Renty in 1544.

Over the next three centuries, as more and more shooters discovered how convenient such weapons could be off a horse as well as on it, pistols began to be carried in belts or even hidden under the heavy clothing of the day, offering protection on dark streets as well as in the home or tavern. But all wasn't perfect with early handguns. The short length of the barrels greatly degraded their performance. Grains of black powder could be ground more finely to increase the amount that burned before the ball left the barrel, but velocity remained low and the pistols ineffective when compared to the range and accuracy that could be achieved by rifled barrels of the day.

To some extent, carbines displaced the revolver for cavalry, though U.S. horse soldiers preferred the revolver over the slow-to-reload carbines the army was issuing when the West was being won. Many historians

believe the first effective military deployment of revolvers in the Old West occurred in 1836 when brand-new Colt Paterson five-shot revolvers in the hands of Texas Rangers proved their deadly effectiveness against Comanche warriors.

The revolver action and, a short time later, the invention of smokeless powder gave the handgun new life worldwide. The new propellants permitted the formulation of more effective powders for pistols. Muzzle velocities went up, and the great eye-blurring clouds of smoke that black powder pistols belched out became a thing of the past. Accuracy became better as new machining resulted in quality barrels and sights. Soon, new industrial techniques coupled with clean-burning smokeless powder made semiauto and even full-auto pistols practical.

But despite all the advances, handguns continued to fire low-velocity cartridges that were much less effective than the rifles of the day. No fighter or hunter took a handgun into the field when a rifle was available.

This attitude started to change with hunters in the mid-1900s, although the reason for this is hard to determine. Very possibly, modern rifles had become so effective that the challenge of the hunt diminished to the point that hunters wanted to increase their handicaps in order to display their skills. Elmer Keith and other writers were proposing the creation of revolver cartridges that could do the work of a rifle cartridge. Not only were these experimenters writing about these rounds, they were creating "wildcat" cartridges that proved the potential of their proposals.

Another force that influenced the development of today's hand cannons was the push toward miniaturization during the mid-1900s. Computers that filled buildings would soon fit nicely on a desktop or even inside an electronic notepad that could be carried in a pocket. Combat rifles shrank from long, 12-pound mon-

strosities to lightweight contraptions formed mostly of plastic and aluminum.

Using custom-made or highly modified and very powerful revolvers and single-shot pistols at first, handgunners brought down deer, wild boar, bear, and other game previously harvested only with rifles and shotguns. Tales of their exploits spread by word of mouth as well as in magazines devoted to hunting and shooting topics. Soon, manufacturers were producing both the ammunition and the handguns that would allow anyone to do similar hunting.

These new pistols were augmented by the shrinking of the rifle, which created a second group of powerful hand cannons. A quick inspection of most of these guns proves they have more in common with rifles than pistols in terms of the cartridges they employ and their locking actions. Their bolt-action, break-open, and gas-cycling designs come directly from rifles and shotguns. Often, many of the parts of these rifles and pistols are interchangeable. This second category of hand cannons can be viewed as "chopped" rifles, with barrels shortened to 14 inches or less and the stocks completely removed, leaving only a pistol grip and, often but not always, a handguard under the barrel or attachment of a bipod for greater support—fixtures common on rifles but seldom seen on pistols until the advent of these modern hand cannons.

Whether based on enlarged and expanded versions of revolvers and semiauto pistols or derived from modern rifles, when it comes to power and accuracy today's hand cannons take up where regular rifles and pistols leave off.

Where a standard 9mm semiauto or .38 Special revolver is doing well if it places its shots in a 2-inch circle at 25 yards, most hand cannons covered in the following pages are capable of putting their shots into a 2-inch circle at 100 yards. And many shrink the group at

100 yards to 1 inch or less. And where the 9mm or .38 Special would seldom be considered adequate for taking medium-sized game, the majority of hand cannons have enough power to kill swiftly and cleanly. Today's hand cannons are a new breed of cat.

The popularity of hand cannons took off in the 1970s and 1980s when handgunners started taking large animals in the field. But the biggest spur toward prominence came about because of a sport that started in Mexico. There, shooters had modified the hunt into a game, shooting live animals tethered to stakes, much the way shotgunners often fired at birds released from cages in days gone by. But just as clay pigeons launched from a catapult replaced flesh-and-blood pigeons, the live animals Mexican handgunners were aiming at were replaced by steel targets cut out in the shape of animals. These silhouette targets were heavy, often 60 pounds, and "hits" weren't counted unless the plate was knocked over. To make things interesting, target ranges often stretched out to 200 meters.

The game of shooting iron silhouettes grew phenomenally, and with it there became a sufficient demand for hand cannons to interest both custom gun builders and major manufacturers. It took a powerful round and an accurate pistol to knock down the plates, and shooters commenced searching for pistols that offered both power and accuracy. Manufacturers and gunsmiths quickly discovered a growing market for hand cannons. By 1991, the largest handgun competition in history took place and, not surprisingly, the shooters were engaged in shooting metallic silhouettes with the relatively new International Handgun Metallic Silhouette Association (IHMSA). At this point, hand cannons had established a niche for themselves. (For a detailed look at the development of metallic silhouette shooting, see *Metallic Silhouette Shooting* by Elgin Gates, available from DBI Books.)

As one might expect, such specialized pistols aren't for the novice shooter, especially in the case of hand cannons firing the more powerful cartridges. Any firearm spitting out bullets powerful enough to bring down large game or a 60-pound plate will produce the recoil normally associated with a rifle. Careful practice coupled with eye and ear protection is essential if a shooter is to avoid an accuracy-wrecking flinch with these firearms.

Once the hand cannon is mastered, it offers many advantages for the shooter. Even though it is larger than a standard pistol or revolver, a hand cannon is still a compact package that can readily fit into a briefcase or be carried easily in the field in an enlarged holster or on a short sling. Not surprisingly, this handiness makes it a favorite among many hunters and target shooters.

Since accuracy can be of paramount importance, especially to those using hand cannons for silhouette shooting, where small, distant targets must be knocked over with a decisive punch of power, a lot of the development in hand cannons has depended on perfecting ammunition for them. In theory, rifle cartridges can simply be fired in hand cannons. In practice, for several reasons accuracy often goes out the door when this is done.

One reason is barrel length. Although most rifles used for target work or hunting have barrels of at least 18 inches (and often much longer), hand cannons have barrels that usually fall in the 10- to 15-inch range and sometimes are only 7 to 8 inches long. Firing a rifle cartridge from a short barrel produces a lot of muzzle blast and wastes a lot of energy; the bullet travels downrange at a considerably slower speed than it would from a longer barrel, while the shooter finds himself listening to a thunderous blast that produces excessive flash and smoke from powder burning beyond the muzzle.

Short barrels also vibrate differently than longer bar-

rels, and hand cannons recoil more rapidly than do heavier rifles. All these things together could and did destroy the accuracy of guns that showed promise on the designing table.

Of course, some shooters could care less about flash, smoke, and inaccuracy. In fact, if such shooters are truthful, that's one reason why they like hand cannons. These firearms are to the shooting community what a big-engined motorcycle without a good muffler is to a teenager. And hunters who plan on taking game at close ranges with a single shot aren't too concerned if their firearm is noisy or "only" puts its bullets into a 4-inch group at 100 yards rather than into a 1-inch pattern.

These people are perfectly happy firing the .223 Remington, .30-30, 7mm-08, .308 Winchester, or other cartridges developed specifically for rifles without any concern for the short barrel lengths of hand cannons. Such cartridges do the job for many hunters. But those wanting the last bit of potential accuracy from hand cannons in order to nail a prairie dog at 200 yards or get all their shots into one ragged hole in a paper target have to travel the extra mile.

The first serious attempt to maximize accuracy in hand cannons based on rifle actions occurred when Remington engineers perfected their bolt-action XP-100. Originally the gun was to be chambered for the popular .222 Remington, a cartridge that made a very satisfactory varmint round when fired from a rifle. But testing proved that the accuracy and ballistics from the short 10- to 10.5-inch barrel of the XP-100 weren't all that great beyond 100 yards.

This stumped the engineers for a time until they realized that the problem wasn't that the powder didn't burn fully in the short barrel; rather, the cartridge had too much empty room in it. Often the powder was arranged differently in the cartridge from one shot to the next, causing erratic burning in the short

barrel and different muzzle velocities according to how much powder had burned by the time the bullet left the barrel.

The solution to the problem proved to be simple: shorten the case. This created a slight drop in power and dictated a lighter bullet. But the powder now stayed in a more consistent position from one shot to the next since it had less room to move in, and it ignited and burned consistently, producing less flash and report along with greater accuracy. The new cartridge became the .221 Fireball and proved a great step forward, even though it was "simply" a shortened .222 Remington cartridge.

This situation has continued to this day. Hand cannon owners with guns chambered in .223 Remington or .222 Remington have horrid times trying to produce handloads that give average performance from ammunition that fires 1-inch groups in a rifle. On the other hand, shooters firing "short, fat cartridges" like the .22 PPC and 67mm PPC or other of the Barnes, or BR, cartridges (named for Frank Barnes, the writer/engineer who pioneered compact carbine and pistol cartridges by shortening and renecking large rifle brass) enjoy superb accuracy.

In addition to target shooting and hunting, today's hand cannons sometimes have more sinister uses. The CIA is known to have purchased silenced T/C Contenders in the past. Exactly what these guns were used for, or even if they have ever actually been used in the field, remains pure speculation. But it doesn't take much imagination to see how a handgun-sized firearm that packs the punch of a rifle might have singular capabilities for which an agent in the field might have need.

It isn't too hard to imagine that hostage rescue teams, counterterrorist squads, or other specialized police and military units might have need for hand can-

nons as well, especially when operating in areas where the "natives" aren't all that sympathetic to the hostages. Hand cannons have a couple of big pluses that those who've carried pistols over the years have always realized: they're easy to carry and attract little unwanted attention in situations where a rifle would.

One final point: most modern pistols would considered be hand cannons when compared to the relatively ineffective black powder pistols of yesteryear. Since this book can't be a catchall of modern handguns, I've taken the liberty of laying down parameters which firearms historians and ballistics experts may take exception to.

In my book (as they say), "hand cannons" will apply to large, stockless guns with barrels shorter than 16 inches, firing cartridges that perform in the power range normally associated with modern hunting rifles. Although game animals can arguably be brought down with anything from the lowly .22 Short on up, I've set the "cutoff" in power at the .44 Magnum and .221 Fireball, cartridges that are in the power range of many rifle rounds and that have proven to be consistent performers when used by hunters and varminters at short ranges.

Hand cannons will also be used to apply to all types of actions—revolver, semiauto, break-open, bolt-action, or what have you—provided that the cartridge the gun fires has the power in the range outlined above. Purists will point out that "pistol" can't be applied to revolvers. I've tried to abide by this rule, even though modern usage permits calling a revolver a pistol.

As for the upper power limit of cartridges that hand cannons fire, it has yet to be set. I've spoken to designers (who've asked to remain anonymous) who've tested their companies' pistol actions with rounds considerably more powerful than those offered in the guns described in the following pages. Not surprisingly, the actions held; today's designs coupled with modern

metallurgy produce guns that are extremely strong and safe. But hand cannons in these chamberings can't be marketed because the operators would most likely be injured. In one series of tests, a source revealed that the company's pistol remained intact with very powerful rifle rounds, but the Ransom rest (traditionally used to test the accuracy of handguns) was torn apart.

It's hard to imagine recoil that could damage a Ransom rest, as these test fixtures are built to last. If such a device can be damaged by recoil, a human hand would receive a memorable thrashing. And the manufacturer fielding such a firearm would have created a truly one-shot gun—at least for each of its owners. Such a firearm would be a lawyer's dream come true—or nightmare, depending on which side he sat on. There are definite upper limits in power for hand cannons, at least at this stage of technology.

In the future we might see such powerful chamberings fielded. Muzzle brakes and spring-loaded grips might conceivably dampen and spread recoil to the point that the strong of heart could survive it with minimal damage to body and soul.

Already there've been a few tentative attempts in this direction, with the most notable being the short-lived pistol version of Bob Stewart's Maddi/Griffin rifle. Chambered for the .50 BMG (Browning Machine Gun) cartridge, this fire-breather had a massive muzzle brake and an anchorlike weight that helped keep recoil manageable (or near manageable, depending on the shooter telling the story).

Another behemoth chambering seen with custom barrels is manufactured by SSK Industries for the Remington XP-100 and Thompson/Center Contender pistols. Known as the 12.9x50.8 JDJ, this cartridge is based on a shortened .460 Weatherby rifle case necked to .50 caliber. It fires a bullet of around 550 grains (the weight depending on what the reloader wants to experiment with) at a

muzzle velocity of around 1,600 feet per second. Currently the 12.9x50.8 JDJ cartridge has the distinction of being the most powerful round for hand cannons, though as inventor J.D. Jones (the brains behind the various JDJ cartridges created by SSK Industries) points out, if someone just lengthens the case a bit he could create an even more powerful round.

Until new and better ways to tame the recoil from these wildcat cartridges is found, not many shooters are actually going to be demanding such powerful rounds. Whether a "next generation" of more powerful hand cannons firing cartridges like the 12.9x50.8 JDJ or even the .50 BMG will ever become popular remains to be seen. It seems likely that these cartridges and the few pistols chambered for them will be historic curiosities rather than the shape of things to come, barring some breakthrough in technology.

And it must be remembered that today's hand cannons already can reach out to the most practical distances, delivering a punch that will take game or tumble steel silhouettes. Considering the limited dollars people are willing to pay for a firearm and the ammunition to feed it as well as the recoil that can be absorbed without damage, they may very well be the most powerful handguns any serious shooter will ever want. If so, today's hand cannons are apt to hold their title as the most powerful handguns for some time to come.

Bolt-Action Hand Cannons

CHAPTER 1

SINCE BOLT-ACTION RIFLES HAVE ALWAYS BEEN NOTED for their inherent accuracy, it isn't surprising that many hand cannons, including the first modern one, the XP-100, operate in this manner. Of course there's more to the task than simply cutting off a rifle's barrel and stock to pistol lengths—a job that might quickly land a do-it-yourselfer in jail here in the United States.

Federal gun laws (passed in the 1930s when the public had been whipped into a frenzy by news stories and Hollywood movies about gangsters and rampant crime) make it illegal to shorten a rifle to pistol dimensions without first obtaining permission from the Bureau of Alcohol, Tobacco and Firearms (BATF, which recently has started referring to itself simply as ATF). This, coupled with a federal tax on the process and the outright banning of such modified rifles in many states, makes it all but impossible to create such a gun from a rifle . . .

. . . *Unless* you are a manufacturer or are using parts that have never been used in a rifle. In such a case, a manufacturer or do-it-yourselfer can declare the

unassembled gun parts to be a pistol. Provided a shoulder stock is never added to the "pistol," it legally remains a handgun governed only by the laws that apply to other handguns. (In theory, the barrel of such a gun can be as long as a builder wishes. In practice, most manufacturers keep the barrels under 16 inches to prevent any mistaken idea that the part might originally have been designed for use with a rifle.)

As noted in the introduction, using rounds that are accurate in a longer barrel won't guarantee accuracy with a pistol. Therefore, for optimum accuracy, "short, fat" rounds have become first choice for hand cannon shooters wanting accuracy. However, since many shooters already own rifles and reloading dies for the .223 Remington, .30-30, and other popular cartridges, most manufacturers offer their bolt-action hand cannons in these chamberings as well. Although loads that are accurate in pistols can be developed in these popular cartridges, the shooter is going to have an easier time if he simply starts out with a cartridge that offers more potential accuracy.

For reloaders, the extra work in adding a new chambering to their operation isn't that tough. If a cartridge that has the same primer size and perhaps even the same bullets already being used is chosen, about the only additional cost to be faced by the reloader is the purchase of new dies, bullets, and brass as well as a faster-burning powder. For those who don't reload, all that's needed is to purchase the extra cartridges at the gunshop (though reloading may be a necessity for peak accuracy).

Any manufacturer making bolt-action rifles can create a pistol by simply altering the stock assembly and shortening the barrel of a production gun. Consequently, there've been any number of hand cannons created over the past few years. That said, it seems probable that collectors and those who haunt

gun shows will occasionally discover pistols not listed in this chapter, which only includes the most popular of these guns.

Most often the rarer bolt-action guns are of quite high quality and every bit as accurate as pistols that have been produced in greater quantities. There's no rule of thumb for figuring out the potential accuracy of such handguns, but it's usually a safe bet that a company that has established a reputation for accurate rifles will be capable of producing an accurate pistol, *provided* the pistol is chambered for a round that is itself potentially accurate. And even then a shooter doesn't know if the manufacturer did the best work on the pistol or, if it is a used gun, whether the previous owner took good care of it. When all's said and done, the best way to test the accuracy of a pistol is simply to take it out and shoot it.

Of course not all bolt-action pistols have rifle forebears. In fact, a few have artillery field piece ancestry, with the action being a scaled-down version of that used on modern cannons—arguably truly "hand cannons." Because these guns work with a bolt-style action, they're included in this chapter, even though technically they are a slightly different system.

Placement of the grip on these pistols makes for a variety of balances among the firearms listed in this chapter. The XP-100 series has the grip near the center of balance; others have the grip toward the rear of the pistol, causing it to be "nose-heavy." Some shooters have a definite preference for one style or the other. The closer the grip is to the center of gravity, the "lighter" the gun feels since the wrist doesn't strain to keep it level on target. (This might be an important concern for handicapped shooters or others who prefer a one-hand hold on these guns.)

A nose-heavy pistol will tend to rise less with recoil. From a speed and accuracy standpoint, this isn't of

much concern with a single-shot pistol since reloading the gun will bring it off target anyway. There's no such thing as a "quick second shot" with a single-shot. On the other hand, the recoil may seem less with the nose-heavy gun since it will tend to recoil rearward rather than exhibiting muzzle flip.

Some shooters prefer the straight-back recoil of a nose-heavy pistol; others don't mind the muzzle rise of the center-of-gravity grip. If you're unsure which group you'll fall into, you'd be wise to test-fire guns of various designs before settling on a style that may—or may not—be to your liking.

DOMINATOR

Rather than taking an in-production rifle mechanism and modifying it to fit a pistol stock, Pachmayr's Dominator goes in the opposite direction, engineering a bolt-action barrel assembly to fit an in-production pistol, the 1911 semiauto. The whole concept and original design was the brainchild of gunsmith Gorge Hoenig, who sold the rights to his handmade prototype to Pachmayr, a company that had been making parts for the 1911 handgun as well as a variety of pis-

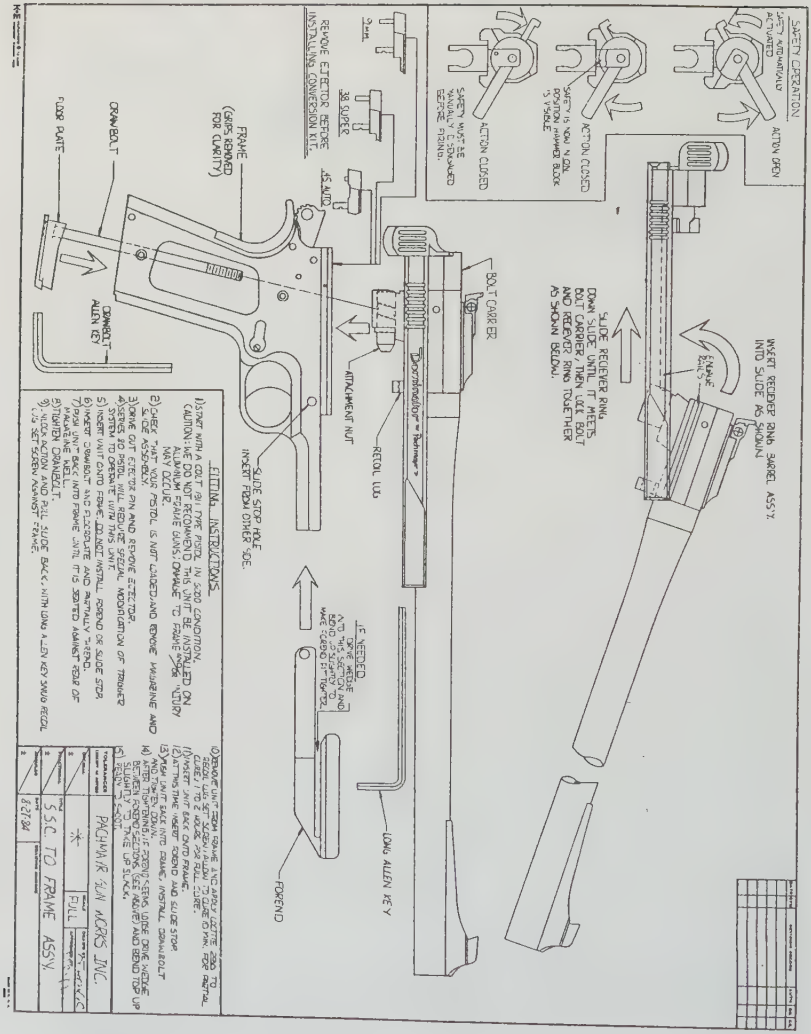
Dominator with several of the cartridges that various models of this pistol are chambered for. (Photo courtesy of Pachmayr Gun Works, Inc.)

Dominator with bolt pulled open for reloading. (Photo courtesy of Pachmayr Gun Works, Inc.)

tol grips and other firearm accessories and doing a lot of custom gunsmithing of "race guns" used in practical shooting contests. When looking at the company's product line, the Dominator seemed like the next logical step for Pachmayr.

Hoenig's conversion kit was marketed by Pachmayr in 1985, and later the company started offering an entire firearm based on the kit in 1988. The pistol couples a standard 1911A1-style pistol frame and trigger mechanism with a bolt-action upper assembly. The conversion kit is also still marketed; it consists of an upper assembly that mounts on a standard 1911 .45 pistol frame, transforming it into a bolt-action, single-shot hand cannon. Owners of Dominator pistols can also purchase kits in different chamberings to augment the number of cartridges they can fire with their firearm.

The upper barrel/receiver kit has a matte blued finish, and, when the entire firearm is purchased from Pachmayr, the frame is finished to match the kit. The upper assembly is machined to fit the frame of a 1911 perfectly, held in place with a long bolt assembly that


SAFETY OPERATION
ACTION OPEN
ACTION CLOSED
SAFETY IS "ON" WHEN HAMMER BLOCK IS VISIBLE
ACTION CLOSED
SAFETY MUST BE MANUALLY DISENGAGED BEFORE FIRING.
REMOVE EJECTOR BEFORE INSTALLING CONVERSION KIT.
38 SUPER
45 AUTO
FRAME (GRIPS REMOVED FOR CLARITY)
DRAW BOLT
DRAWBOLT ALLEN KEY
FLOOR PLATE
BOLT CARRIER
RECOIL LUG
ATTACHMENT NUT
SLIDE STOP AXLE INSERT FROM OTHER SIDE
IF NEEDED CAREFULLY REMOVE AND THIS SECTION AND MAKE SLIGHTLY SHORTER
FOREND
LONG ALLEN KEY
INSERT RECEIVER RING BARREL ASS'Y. INTO SLIDE AS SHOWN
SLIDE RECEIVER RING DOWN SLIDE UNTIL IT MEETS BOLT CARRIER, THEN LOCK BOLT AND RECEIVER RING TOGETHER AS SHOWN BELOW.
FITTING INSTRUCTIONS
PACHMAYR GUN WORKS INC.
S.S.C. TO FRAME ASS'N.

Patent drawing showing the basic operation of the Dominator. (Drawing courtesy of Pachmayr Gun Works, Inc.)

extends through the original magazine well of the 1911 frame. A forend fits under the barrel, held in place by the slide stop that extends through the pistol's frame. (The forend is so small that most shooters will wish to

use a two-handed grip, with the offhand wrapped around the shooting hand rather than placing it under the forend. The forend mostly helps support the barrel, adds a bit of recoil-reducing weight, and acts as an attachment point for a sling swivel.)

The Dominator barrel comes with a front sight that's epoxied in place. Shooters wishing to remove the sight can simply heat it up slightly with a propane torch and then knock it out with a mallet. The rear sight can then be removed and its mounting holes used to secure the scope base offered by Pachmayr for the gun.

The bolt on the Dominator has more in common with field cannons than it does with a rifles since it's based on an old artillery design. This creates a very short bolt that employs three front-locking lugs that cam into recesses in the receiver. The face of the bolt lacks both an extractor and an ejector; instead, it's shaped more like a shell holder on a reloading press. This makes it simple to keep the brass after the gun is fired—an important feature to many users since optimum accuracy from a hand cannon often requires reloading cartridges.

The hammer on the 1911 frame must be cocked before a cartridge can be inserted into the Dominator breech. A hammer block safety inside the bolt helps prevent premature firing of a shell being inserted into the chamber, and the frame safety can also be engaged for added safety. The best best, though, is for the shooter to simply to keep his trigger finger away from the trigger until he's ready to fire.

Once the Dominator is loaded and the shooter ready to fire, the safety blocking the rear of the bolt must be flipped up and the frame safety (if engaged) released. Pulling the trigger then drops the hammer, which strikes the firing pin at the back of the bolt, firing the cartridge.

Any gunsmith familiar with the 1911 action (and

most are) can adjust the trigger pull of the Dominator. For those using the Dominator kit on their own 1911 frame, the pull will be as good or as bad as that of the 1911. Generally, the pull will be in the 4- to 6-pound range on most 1911s, though some imported versions have pulls that won't be acceptable for precision long-range shooting until the internal parts have been smoothed and polished by a gunsmith.

Dominators chambered for .44 Magnum, 7mm-08, .22 Hornet, .223 Remington, .308 Winchester, and .35 Remington all appear in the Pachmayr catalog. The action has optional iron sights available and is also drilled and tapped for easy scope mounting.

The Dominator's accuracy is quite high; Pachmayr guarantees that the pistol will shoot at least 1-inch groups at 50 yards, and most guns are capable of sub-MOA groups (i.e., 1-inch or smaller groups at 100 yards). For those wanting to carry this gun on a sling, for a nominal extra charge Pachmayr will install sling swivels on the forend and base of the magazine well insert.

SPECIFICATIONS FOR PACHMAYR DOMINATOR

Model	Length	Weight (Unloaded)	Barrel Length
Dominator	16"+	4 lbs.*	10.5 or 14"

+With 14-inch barrel
*With 14-inch barrel

LONE EAGLE

This pistol is manufactured by Ordnance Technology, Inc. (Stetson, Maine) and for a short time was marketed as the SSP-91. Since it is distributed by Magnum Research, this single-shot was later redubbed the Lone Eagle to come into line with the rest of Magnum Research's pistols, all of which carry some variation on the Eagle handle.

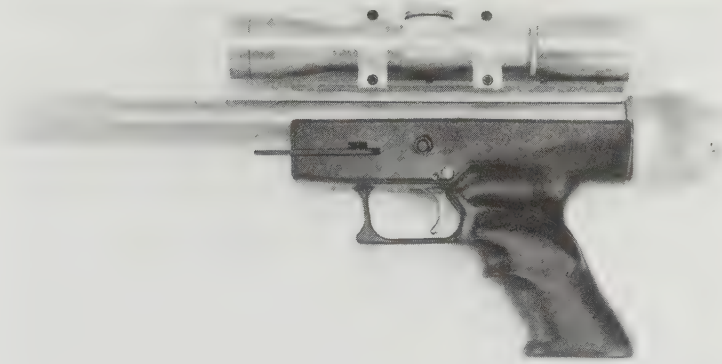
A Lone Eagle with standard grip and satin-finished scope mount in the carrying case offered by Magnum Research for these guns. Note AK-74-style muzzle brake. (Photo courtesy of Magnum Research, Inc.)

Lone Eagle with scope mount. The bar extending from the front of the frame is the cocking lever. (Photo courtesy of Magnum Research, Inc.)

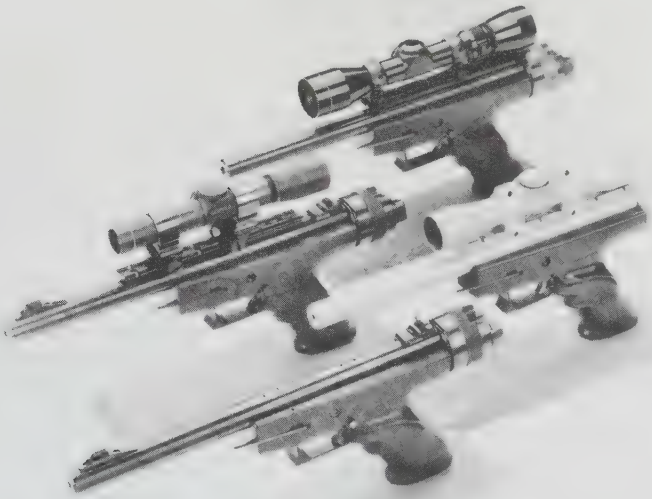
Lone Eagle with standard iron sights. (Photo courtesy of Magnum Research, Inc.)

Lone Eagle with iron sights and scope block. "See-through" scope rings permit targeting with either the scope or the iron sights. (Photo courtesy of Magnum Research, Inc.)

Introduced in 1991, this hand cannon boasts a barrel that can easily be removed with a hex wrench (supplied with the pistol). To change barrels, the cross bolt is simply removed with the wrench, the bolt extracted from the right side of the receiver, and the barrel assembly lifted out. A new barrel is then placed into the grip assembly and the cross bolt returned to its place. The entire operation can be done



The silver matte Ecoloy II finish on this Lone Eagle gives it a very attractive two-tone look. (Photo courtesy of Magnum Research, Inc.)



Four of the many variations possible with the Lone Eagle design. Note the drilled and tapped scope and sight holes that are placed on all barrels. (Photo courtesy of Magnum Research, Inc.)

in less than a minute or two once the owner gets the hang of things.

Like many other hand cannons, the Lone Eagle comes in a wealth of chamberings. Furthermore, the manufacturer has taken advantage of the pistol's super-strong cannon-type lockup to chamber it for a number of high-power big game rounds. For many shooters, the wide range of power offered in the various chamberings has made this gun attractive since the same Lone Eagle with a spare barrel assembly can handle lighter varminting and target loads as well as larger iron silhouette and hunting cartridges. Among the chamberings offered for the Lone Eagle are the .22 Hornet, .223 Remington, .243 Winchester, .22-250, 7mm-08, 7mm BR, .308 Winchester, .30-30, .30-06, .35 Remington, .358 Winchester, .357 Maximum, .44 Magnum, and .444 Marlin.

Loading and unloading are accomplished by rotating the ring assembly at the rear of the pistol's breech. Rotating the ring 105 degrees exposes the chamber and permits easy insertion of a cartridge. Once the gun is fired, rotating the ring ejects the fired casing and permits the reloading of a new round.

The gun is cocked by pulling the cocking lever located just above the front of the trigger guard. Once cocked, its safety, located on the left side of the receiver, can be engaged by pushing it inward; the safety cannot be engaged unless the pistol is cocked. This system permits carrying a round in the chamber with the gun uncocked or "cocked and locked" for those wanting to do so. The hammer pull is around 5 pounds. Owners should never dry-fire the Lone Eagle with the barrel removed or with the breech ring closed over an empty chamber since this damages the firing pin assembly. The safety system permits practicing with an empty pistol safely since the breech must be open to prevent damage, making it obvious that the pistol is empty.

The Lone Eagles come with a matte blue finish, and a matte chrome finish is available through the company's custom shop. Magnum Research also offers barrels with an integral muzzle brake in the 7mm-08, .308 Winchester, and .30-06 chamberings. These barrels have a silver matte Ecoloy II finish that is similar to stainless steel in appearance. The composition stock on all models is identical, with a thumb rest molded into the left side of each stock, a plus for right-handed shooters but a bit uncomfortable for lefties.

Barrels are drilled and tapped for easy scope mounting, and a scope base is available from Magnum Research. Though iron sights don't come with the standard guns, they are drilled and tapped to accept the accessory iron sights sold by Magnum Research. Two types of iron sights are available, one designed for hunting and the other for silhouette shooting. Both are adjustable.

Two types of Lone Eagle holsters are offered by Magnum Research. One is a Cordura "bandolier" holster, the other a leather hip holster. Both accommodate a scoped gun with the standard-length 14-inch barrel.

SPECIFICATIONS FOR LONE EAGLE

Model	Length	Weight (Unloaded)	Barrel Length
Lone Eagle	15"	4-4.18 lbs. *	14"

* Weights vary according to the chambering.

ZITTA MASTER BLASTER

At first glance the Zitta Master Blaster doesn't resemble any other bolt-action pistol in this chapter. Many might even argue that it isn't a bolt-action since it's based on the AR-15 semiauto rifle action. But lacking a gas tube, the AR-15 becomes a bolt-action rifle in the most strict way of reckoning things since the bolt turns and locks into the barrel, just like a regular bolt

action. Therefore, the Master Blaster is included in this chapter, despite its unorthodox lineage.

The Master Blaster, introduced by gunsmith Allan Zitta in the late 1980s, is a custom-made pistol based on the AR-15 rifle action. The major departure from the original rifle is the omission of the stock and the gas system. To cycle the bolt, an oversized charging handle is employed to manually operate the pistol, extracting a round on the rearward stroke and chambering a new cartridge from the detachable magazine with the return.

Zitta's hand cannons usually have custom wooden pistol grips, machined handguards, and often one-of-a-kind parts and features like tubular sights and hand-crafted muzzle brakes. "Master Blaster" is often inscribed on the side of the pistol. Costs vary considerably from one gun to the next, with the "floor" starting at around $1,500 and going up from there. Zitta also does trigger tuning for $125, reducing the pull to 3.5 pounds. (For information about the semiauto version of this weapon, see Chapter 4.)

SPECIFICATIONS FOR THE MASTER BLASTER

Model	Length	Weight (Unloaded)	Barrel Length
Master Blaster	23"*	3.8 lbs.+	varies

* Length with 14-inch barrel

\+ Approximate weight with 14-inch barrel

PREDATOR

The Predator is marketed by Kimber, which introduced the pistol in 1987. As is often the case with new models, the Predator is simply a shortened version of an existing model, in this case the company's Model 84 mini-Mauser rifle. The pistols come without sights and are available with either claro walnut stocks (on the Hunter model) or French walnut (on the Supergrade model).

Unlike most hand cannons, the Predators have checkering on their forends; the Supergrade models also boast an ebony tip on their forend. Chamberings for these single-shot pistols include .221 Fireball, .223 Remington, 6mm TCU, 6x45, and 7mm TCU.

Like the Kimber rifles, the Predator pistols are well made. However their hefty price tags—$995 for the Hunter and $1,195 for the Supergrade—undoubtedly have had much to do with their scarcity in the shooting community.

SPECIFICATIONS FOR PREDATOR

Model	Length	Weight (Unloaded)	Barrel Length
Hunter	16.75"	5.5 lbs.	15.75"
Supergrade	16.75"	5.5 lbs.	15.75"

ULTRA LIGHT MODEL 20 REB HUNTER'S PISTOL

As the company's name suggests, Ultra Light is famous for its lightweight, custom-made rifles. First introduced in 1986, these rifles are superaccurate, thanks to the use of Douglas barrels and glass bedding in Kevlar/graphite composition stocks. While the model number remains constant from one Model 20 to the next, in fact there can be a great variation in actual design since guns are made more or less on a custom basis. Therefore chamberings, barrel lengths, sighting systems, etc., can be quite different between one Model 20 and another.

The Ultra Light Model 20 is based on the company's rifles, incorporating the same action and adjustable Timney trigger system and two-position safety. The pistols have composition, contoured grips and are available with left- or right-handed actions. Shooters also have a choice of matte or bright metal finish on the barrel and action, and the stock is normally coated with Du Pont Imron paint in green, brown, black, or cammo according to the wishes of the customer. The Model 20

lacks sights but comes with the scope mount rings designed for the company's rifles.

Although the Model 20 resembles the XP-100 outwardly, it has a 5-shot magazine, making it a bit more flexible for various hunting and targeting needs. Being a custom pistol, the Model 20 is available in just about any chambering the purchaser wants, according to company officials. Cartridges falling between the .22-250 and .308 Winchester are more or less the "standard" chamberings.

As might be expected, this custom pistol carries a $1,600-plus retail price tag, with various extras adding to the final price.

SPECIFICATIONS FOR ULTRA LIGHT MODEL 20

Model	Length	Weight (Unloaded)	Barrel Length
Model 20	15.5"	4 lbs.	14"

WICHITA MASTER PISTOL

In 1991, Wichita Arms introduced its custom-made contest hand cannon, the Master Pistol. As a custom firearm, this pistol carries a lot of the extras a shooter might ask for, including an adjustable trigger and a glass-bedded action with an oil-finished walnut stock.

The gun is available only with a left-handed action on a right-handed stock with a thumb rest carved into its pistol grip. Although the pistol appears to be a single shot, in fact it has a 3- or 5-round magazine, depending on the size of the cartridge it's chambered for. The front sight is hooded, similar to that of many target rifles, while the rear sight is click adjustable.

The Master has a lot of nice features, including a two-tone finish and excellent accuracy. The tradeoff is a hefty retail price tag of $1,500. Chamberings include 6mm BR, 7mm BR, .243, 7mm-08, .22-250, and .308 Winchester.

SPECIFICATIONS FOR WICHITA MASTER PISTOL

Model	Length	Weight (Unloaded)	Barrel Length
Master Pistol	13.5"*	4.5 lbs.+	13 or 14.875"

* Length with 13-inch barrel
+ Weight with 13-inch barrel

XP-100

Remington created the first commercial bolt-action "hand cannon" in 1963 with its introduction of the XP-100 chambered for the company's then new .221 Fireball, created specifically for the pistol. In addition to being the first bolt-action pistol most shooters had ever seen, the firearm departed from a number of other conventions as well. The most notable was the use of Zytel plastic to form the stock and grip from one solid piece

Original XP-100 pistol. (Photo courtesy of Remington.)

The Remington Model 700 action served as the basis for the XP-100 pistol. (Drawing courtesy of Remington.)

of plastic. This design feature not only cuts down on production costs, since the checking and contours of the stock can simply be molded in one operation, it also helps assure accuracy since the stock doesn't swell or warp when exposed to humidity. The design also permits seating the barreled action very tightly to help ensure consistent shots from one round to the next.

In an effort not to depart too radically from tradition, the Zytel stock has, as the company catalog once put it, "white spacers and diamond inlays (to) enhance appearance and value." A ventilated rib is placed between the rear and front sight and the barrel is drilled and tapped for easy scope attachment.

The XP-100's basic action doesn't require a lot of design work since it is built around the Remington Model 700 bolt-action rifle assembly. The major design work is in the stock and trigger assembly.

Remington designers had a good sense of what target shooters and varminters who would purchase the pistol would want. The company sells the gun with a match-style trigger that has a crisp let-off and no wobble, and the front of the trigger is grooved for good finger purchase. The stock also has left five fore-end cavities that permit placing .38-caliber bullets inside to increase the forward balance of the pistol. The rear sight is adjustable for windage and elevation.

Because it is based on the Model 700 rifle action, the bolt handle on the XP-100 is on the right side of the grip.

This is ideal for left-handers but a pain for right-handers since it dictates removing the hand from the grip to cycle the action and reload the single-shot pistol. (This was especially a problem for new owners of the XP-100 at the time of its introduction since many shooters adopted the conventional one-hand hold—even Remington ads for the gun showed it being fired from a single-hand stance.)

Fortunately, many target shooters working with the gun realized that a two-hand hold could steady the gun considerably. Consequently, most right-handed owners have never seemed to mind the positioning of the bolt once a two-handed grip of some type was adopted. Once this is accomplished, it's possible to reload the gun just about as quickly as if the bolt handle were to the left of the action.

Remington seized the market niche for such pistols and had few competitors for many years since the XP-100 proved capable of placing its bullets into a 1-inch group at 100 yards. Even today, the XP-100 or one of its variants will usually be seen wherever there are shooters firing at distant steel silhouettes or hunting varmints at long ranges.

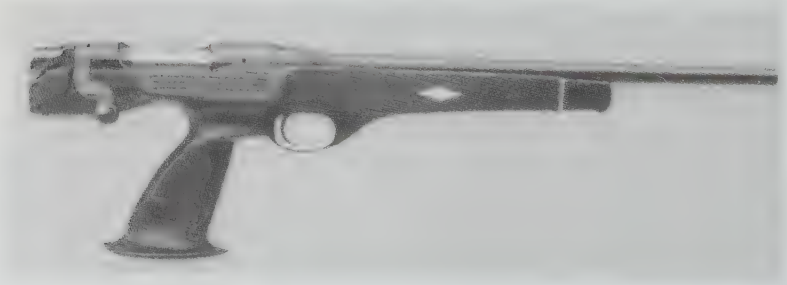
Perhaps because of its good initial engineering and design, the XP-100 pistol design has changed very little over the years. Eventually shooters grew accustomed to the idea of plastic stocks, and the Zytel molding became an attractive black (rather than woodish brown), though the white diamond inserts remained since they'd become somewhat of a trademark on this gun. The vent rib down the top of the barrel disappeared over time along with the sights on most of these guns since they are almost always fired with a scope mounted to take advantage of their accuracy.

The .223 Remington (a cartridge very similar to the .222 Remington the XP-100 was originally designed for) was added to the company's offerings and, due to a

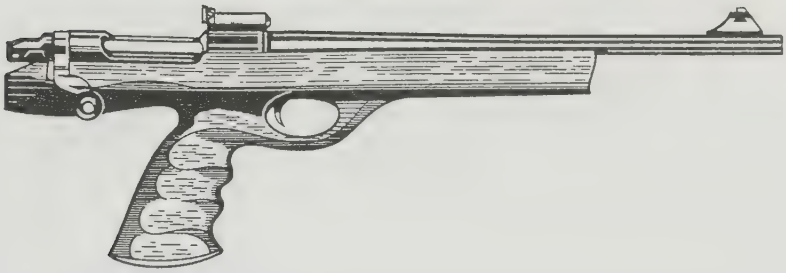
strange quirk of market demand, finally became the only chambering available for the gun. By the late 1980s, the public just wasn't buying enough of the guns chambered for the .221 Fireball to make producing them a worthwhile proposition for Remington. At this point, those wanting a gun in a more effective chambering had to go to the XP-100 Custom Long Range Pistol, introduced in 1986. This is an excellent pistol, but it carries a retail price tag $500 higher than the standard Varmint Special, as the original XP-100 has come to be known.

The XP-100 was missing from Remington's 1994 catalog, but sources close to Remington have revealed that the company plans on bringing it back into production late in 1994 or early 1995. More good news is the chamberings that will be available; in addition to .223 Remington, shooters will have a choice of the highly accurate 35mm, 7mm-08, and .35 Remington.

The plastic-stocked XP-100 has had a number of names tagged after it, from Synthetic to Varmint Special. The sister pistols that Remington created as spin-offs have cut into some of its market, but the XP-100 continues to be enjoyed by many shooters. It offers a lot of accuracy at a low cost, thanks to the many years the gun has been in production as well as its synthetic



Remington XP-100 Synthetic is similar to the original XP-100 but has a black, rather than brown, plastic stock and lacks the original iron sights and barrel rib. (Photo courtesy of Remington.)



Remington XP-100 Custom. (Drawing courtesy of Remington.)

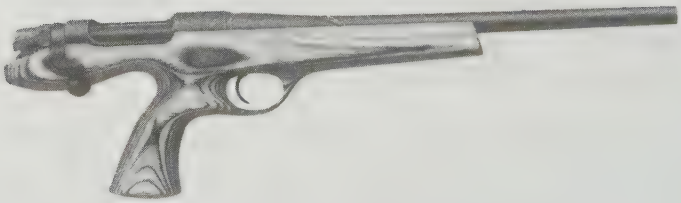
stock that can be manufactured with a minimum of machining.

The first spin-off of the XP-100 was introduced in 1986. Known as the XP-100 Custom Long Range Pistol or simply the Custom, this pistol is based on the XP-100 action coupled with a heavy barrel and a modified wooden stock design. These guns are made in the Remington Custom Shop, where specialized craftsmen add more-than-usual spiff and polish to guns and do other alterations to the company's basic firearms. As might be expected, such niceties cause the price of the pistols to go up accordingly.

One big plus of the XP-100 Custom is that it is available in a so-called "left-hand" model with the bolt action on the left side of the receiver. This positioning of the bolt may be handy for left-handers with rifles, but on a pistol it's better for those of the right-handed persuasion. Consequently, many right-handed shooters may prefer to purchase the so-called left-handed model.

The XP-100 Custom pistols are generally seen with walnut stocks having grooved finger swells and Bo-Mar rear sights with interchangeable front blades. Many guns have bull barrels. In 1992, Remington announced that the Custom would be available in .22-250 Remington and .308 Winchester; by 1993, the company offered the gun in .223 Remington, 6mm BR, .22-

250 Remington, .250 Savage, 7mm BR, 7mm-08 Remington, .308 Winchester, and .35 Remington. Demand for all of these chamberings appears to have been small. By 1994, Remington had reduced the available chamberings to the .223 Remington, 7mm-08 Remington, and .35 Remington.



Remington XP-100 Hunter. (Photo courtesy of Remington.)

In 1993, Remington released the XP-100 Hunter pistol. This apparently was designed to replace the synthetic stock XP-100, which was discontinued at this same time. This model has a laminated wooden stock, more streamlined appearance, and the 14-inch barrel that was made popular with the Custom guns (and which also generally gives better accuracy with the .223 Remington cartridge than does the shorter 10.5-inch barrel). The Hunter is available in both left- and right-handed models, the difference between the two being the positioning of the bolt lever on the left or right of the receiver.

The Hunter comes without sights and is drilled and tapped for scope mounts. Rather than the bright blue finish found on most synthetic-stock XP-100s, the Hunter has a matte blue finish. Chamberings include .223 Remington, 7mm BR Remington, 7mm-08 Remington, and .35 Remington.

In 1993, Remington came out with the XP-100 Silhouette. This pistol features the basic layout of the

Remington XP-100 Silhouette. (Photo courtesy of Remington.)

original XP-100 with the 10.5-inch barrel and large target sights coupled with a walnut stock. At the time of this writing, this gun is available only in the 7mm BR Remington, which the majority of silhouette shooters currently use for contest work.

SPECIFICATIONS FOR REMINGTON XP-100 SERIES

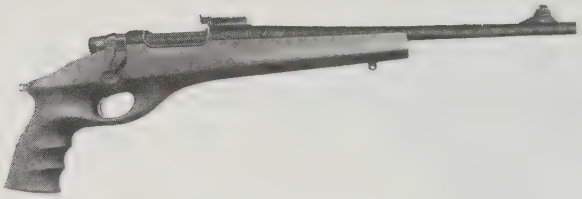
Model	Length	Weight (Unloaded)	Barrel Length
XP-100	16.75″	3.75 lbs.*	10.5″
XP-100 Custom	20.75″	4.5 lbs.	14.5″
XP-100 Hunter	21.25″	4.5 lbs.	14.5″
XP-100 Silhouette	17″	4 lbs.	10.5″

* Weight without balance weights added

XP-100R REPEATER

Introduced in 1990, the XP-100R Repeater (sometimes designated the XP-100R Custom KS Repeater) is built in the Remington Custom Shop and has a tough Kevlar-reinforced stock, giving it exceptional durability and stability when exposed to the elements. Although the XP-100R uses the basic XP-100 action, the stock is quite different in shape to accommodate a magazine that permits rapid reloading of the pistol.

To make room for the internal magazine, the grip has been moved to the rear of the pistol, radically



Remington XP-100 Repeater has a stock that differs from earlier XP-100s due to the magazine lying beneath its bolt. (Photo courtesy of Remington.)

changing its appearance and balance from that of the XP-100. This change in balance doesn't present a problem for shooters who adopt a grip that places the offhand below the forend or for those who use a bipod, bent arm, or other method of resting the forend to steady the gun.

The XP-100R is offered in a wealth of chambers, including .223 Remington, .22-250, 7mm-08 Remington, .250 Savage, .308 Winchester, .350 Remington Magnum, and .35 Remington. Magazine capacity with the smaller-diameter cartridges is six, while larger cartridges dictate a 5-round magazine. All guns have open sights except for the .223 and .250 chamberings, which are only drilled and tapped for scope mounts. All XP-100Rs have sling swivels at the rear of the stock just above the rear of the pistol grip and toward the front on the underside of the forend. Many shooters find that this permits a steady hold with a modified hasty sling or other arrangement that can be used to brace the gun.

In the early 1990s, the Remington Custom Shop also offered the XP-22R Repeater. Chambered for the .22 LR, this pistol was built around the Kevlar stock assembly created for the XP-100R along with a modified action of the company's Model 541-T target rifle chambered in .22 LR. Unlike its centerfire sister pistol, the XP-22R has

a detachable magazine that protrudes slightly below the stock. It lacks sights and is drilled and tapped for a scope mount.

The XP-22R is accurate and makes a good companion piece to the XP-100R (especially for shooters who want to hone their skills without a lot of expense or who need to go to a rifle range to practice). Nevertheless, demand for the pistols was never great, and Remington soon discontinued it from its product line.

SPECIFICATIONS FOR REMINGTON XP-100R

Model	Length	Weight (Unloaded)	Barrel Length
XP-100R Repeater	16.75″	4.5 lbs.	14.5

Break-Open and Falling-Block Hand Cannons

CHAPTER 2

BEFORE THE INTRODUCTION OF THE THOMPSON/CENTER Contender, break-open actions had been relegated to the realm of the double-barrel shotgun along with a few single-shot shotguns, single-shot rifles, and "combination" guns (a rifle barrel coupled to a shotgun barrel) on the marketplace. Despite their lack of popularity today, these guns were very popular in the past, and they are handy to use and often have the added plus of an exposed hammer that shows at a glance the condition of the trigger mechanism. The big shortcoming of this action is its tendency to become loose with extended firing. Today, most shooters wanting accuracy and durability go with a bolt-action rifle or pump-action shotgun.

The break-open design has enjoyed a new lease on life with modern machining techniques that permit close tolerances for good accuracy. Consequently, the new designs of many of the hand cannons in this chapter can be as accurate as the bolt-action handguns from other makers.

The Thompson/Center Contender was the first of the modern break-open action pistols. It has held its position at the head of sales for some time, though

similar pistols based on the break-open action appear—and often disappear—from time to time. With the wealth of interchangeable barrels and accessories that Thompson/Center Arms has created for its Contender, it seems likely that this company will hold its market share for some time to come, making it next to impossible for other "contenders" to cut into its business.

Of course, the only way to increase the firepower of the break-open action is to place double or even triple barrels on it. While this has been done in the past with various rifle and shotgun combinations like the European "Drilling" rifles, it seems doubtful that this will ever happen with hand cannons for the simple reason that getting two or more barrels to have the same point of aim is problematic at best and becomes quite expensive with the quality barrels used on most hand cannons.

On the other hand, the break-open action permits easy and quick barrel exchanges. Those wanting a handgun that can fire anything from the .22 LR to heavy hunting cartridges have discovered that these guns are just the ticket. Too, those who choose these guns for hunting argue that the accuracy of their pistols makes it possible to make clean kills with just one shot; the need for a fast second shot is normally nonexistent.

All companies tend to be pretty "close to the vest" in revealing sales figures, and firearms manufacturers are no exception. But according to the *American Firearms Industry* magazine, 1992 production of pistols by Remington ran at only 281, while those produced by Thompson/Center Arms totaled 15,384. Even if the sales of black powder pistols by Thompson/Center Arms is factored out of this total, it would appear that the company is well ahead of many of its competitors, with the possible exception of some revolver and semiauto hand cannons that can be multifunctional, serving for self-defense as well as hunting and target shooting, for example.

Of course, the Contender and other break-open actions aren't the only "old-time" designs to be adapted to modern hand cannon use. Another one to make a comeback in the marketplace is the falling-block action, which dates back to the introduction of powder and bullets packed into a cartridge of one sort or another. The falling-block actions were most commonly seen with rifles, though a few old dueling pistols were found with it. Although the falling block doesn't accommodate itself to interchangeable barrels, it nevertheless offers a lot of accuracy and is ideal for many hand cannon shooters, especially those wanting to specialize in a single chambering.

Often this type of specialization isn't as limited as it might first seem, since the hand cannon owner can "download" cartridges, putting lighter charges in them to create milder "squib loads" for varminting, plinking, or whatever. In such a case, the shooter purchases a hand cannon in the largest primary chambering he'll need and then hand-loads ammunition to suit shooting tasks requiring less power.

At the time of this writing, E. Arthur Brown Company's BF Pistol is the only falling-block pistol being marketed in any numbers. These guns are accurate and well made, seemingly destined to hold onto the falling-block segment of the market and, perhaps, even challenge the sales of more established guns like the XP-100 and T/C Contender.

1911-A2 SASS

The Springfield 1911-A2 SASS is based on a conversion unit that mounts atop a 1911A1 .45 auto frame in a manner similar to the Pachmayr Dominator covered in the previous chapter. The principal difference between the two units is that the 1911-A2 SASS incorporates a break-open action into its design.

Springfield currently markets only a conversion unit

1911-A2 SASS pistol. Insert: pistol broken open for reloading. (Photo courtesy of Springfield, Inc.)

for mounting to the buyer's steel-frame 1911 by a gunsmith (who must modify the kit to fit the frame). The 1911-A2 SASS comes in two barrel lengths, a 10.75-inch and a 14.9-inch. Chamberings include .22 LR, .223, .308 Winchester, and .44 Magnum.

The 1911-A2 SASS doesn't offer anything that can't be found in other break-open actions in this chapter but makes a good choice for shooters accustomed to the "feel" of the 1911 semiauto grip. As such, it's a good choice as a hand cannon for those who like the 1911 pistol.

SPECIFICATIONS FOR 1911-A2 SASS

Model	Length	Weight (Unloaded)	Barrel Length
1911-A2 SASS	17"*	4 lbs.+	10.7 or 14.9"

* Length with 14.9-inch barrel

+ Weight with 14.9-inch barrel

BF PISTOL

The BF Pistol is named after Bert Stringfellow, the designer of the pistol, and his wife, Faye. Created in the 1980s as a competition gun for the Field Pistol Metallic Silhouette competition, the first models of these guns were shipped to purchasers in 1987. The initial 200-

some BF Pistols were chambered for the .32-20 and .32 H7R Magnum, with the first orders financing the start-up tooling for their production. These chamberings weren't as popular as the manufacturer might have hoped; soon the 7mm SuperMag and other chamberings were being offered in an effort to increase sales.

From the first, Stringfellow's goal was to create a superaccurate pistol that was also affordable. To achieve this, he selected the falling-block action since it offered a strong and rigid barrel/frame lockup. Quality barrels and an air gauge helped ensure the accuracy of the completed pistol.

The basic design of the BF Pistol was well thought out, but as is usually the case with all firearms, the bugs weren't entirely worked out of the system before its release. Some of the original guns exhibited problems with extraction. Worse, the small market of potential buyers in the silhouette community seemed to be drying up just as the BF Pistol was being introduced to the marketplace. By the early 1990s, Stringfellow announced that he would only continue to produce the pistols until his stock of parts ran out.

The E. Arthur Brown Company had just taken over distribution of the BF Pistol at this point. Seeing the supplier suddenly decide to quit, and believing that there was a market for the pistol, Eben Brown (the brains behind E. Arthur Brown Company) decided to purchase the tooling and continue production of the BF Pistols himself.

Before launching another production run of pistols, however, Brown decided to raise both the price of the new models and increase the quality of the finish in order to make them competitive with the Thompson/Center Contender and similar firearms. The first changes Brown made were the addition of Herrett stocks for a custom look and a ram's-head etching on the receiver. More effective sights contracted from

RPM of Arizona were also added. Bullberry Barrelworks created reliable head spacing and tight chambers for the new Douglas and Wilson barrels purchased for the guns.

By the time the new BF Pistols were being assembled, Brown realized that the asking price was going to be higher than he had expected. Rather than try to price what had become a custom pistol against production firearms like the T/C Contender, he decided to charge an additional $100 in his asking price to enable him to maintain the quality of his final product.

Racing to beat the deadline for the 1992 IHMSA international championships in Fort Stockton, Texas, Brown's workers got 25 of the new BF Pistols assembled and shipped to customers who would be shooting in the contest. Then Brown himself manned a booth at the IHMSA championships, taking careful note of what the contestants desired in their pistols. Included in the list of "needs" were a hooded front sight with variable post widths, a heavier weight, and a 10.75-inch barrel.

The end result appeared in E. Arthur Brown Company's 1993 lineup. The new Ultimate Silhouette had all the extras the shooters had told Brown they wanted. Sales started slowly, but during the spring and summer word spread about the new model's accuracy—customers were writing to the company about the 5/8- to 3/4-inch groups the pistols fired at 100 yards. Soon the BF Pistols were back ordered through the next half year.

Brown is now working to expand sales of the BF Pistol into the hunting market. As he sees it, the handgun can fire cartridges utilizing effective 6.5mm, 7mm, and .308 bullets and achieve rifle power—often more accurately than most bolt-action hunting rifles. "We're talking about a 200-yard hunting gun you can aim point blank and yet light and portable enough to carry on your hip," he says. "Perhaps equally impor-

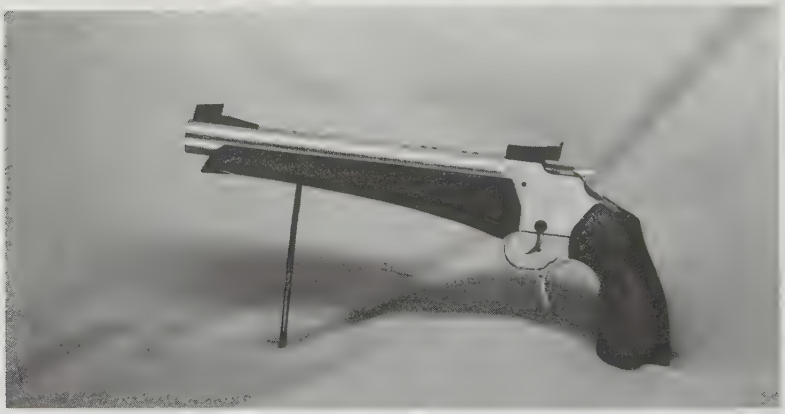
tant is that recoil with these guns is not punishing. I think this evolution of the hunting pistol might quite accurately be termed the 'hand-rifle.'" To back up this contention, he points out that his guns have already proven the accuracy and power concept in silhouette contests, where they regularly knock down 60-pound targets at 200 meters.

Regardless of whether the BF Pistols are employed for hunting or target shooting, one thing is sure. "We're selling accuracy," Brown writes in the company catalog. "We guarantee that a BF Pistol . . . [will be] capable of placing 5 shots into an inch group at 100 yards for one year."

Currently, there are a number of different BF Pistol models, and since these hand cannons are sold more or less as custom guns, there's a wide variance in their layouts from one pistol to the next. Therefore, different sights, barrel lengths, or other features won't often be consistent even within model designations.

That said, the Ultimate Silhouette generally is seen with a barrel of 10.75 inches. Iron sights are almost always found on these guns, with both patridge as well as hooded front sights (the latter with a choice of blade widths). Rear sights are either Williams or RPM adjustable sights. A hood for the rear sight is also sometimes seen with these guns. Although these guns can be purchased in virtually any chambering, E. Arthur Brown Company's recommendations for best accuracy are the 7mm SuperMag, .270 Max, or 7mm US cartridges.

The New Varminteer model sports a 15-inch, 0.905-inch diameter barrel. The pistol normally has no sights; rather, the company's Triangle Force scope mount is placed on the gun. This scope mount system has six screws in the base with three rings (rather than the usual pair of rings seen on most mounts). These bolts and rings secure the scope in place during the heavy recoil of the BF Pistol.



BF Pistol with short barrel and iron sights. (Photo courtesy of E. Arthur Brown Company.)

New Varminteer BF Pistol with scope and Triangle Force scope mount system. (Photo courtesy of E. Arthur Brown Company.)

As with other of the company's guns, the New Varminteer is available in most any chambering a customer requests. However the recommended cartridges, especially for those who may be using their pistol in Unlimited Class Metallic Silhouette contests, are the .219 Donaldson Wasp and 7mm US.

The Brown Model One rifle borrows one of the tricks used by Thompson/Center to transform a pistol into a rifle configuration. In 1992, shortly after taking over the production of the BF Pistol, Eben Brown took one of the company's actions and put a Bullberry rifle-length barrel on it. He then sent the barreled action to the WoodSmith company to design a stock and forend for it. The end result was a handy single-shot carbine that proved to weigh less than 6 pounds—with scope—and which was shorter than a comparable bolt-action gun thanks to the more compact falling-block action.

This gun was a success, and now the E. Arthur Brown Company catalog lists it as a custom rifle. Shooters can choose right- or left-handed models, length of pull, height of comb, etc. Standard barrel length is 22 inches, but shorter or longer barrels are offered. Retail price is $750, a real bargain when compared to the cost of most other custom rifles. Chamberings are almost unlimited, with most popular rounds from .17 Bumblebee through .45-70 available. E. Arthur Brown Company also offers a .50-caliber muzzle loader model of the Brown Model One as well.

The Blunderbuss shot pistol has a rifled 10-inch barrel chambered for .45 Long as well as the .410 shotgun shell. A .410 shotgun shell creates a 1-foot shot pattern at 10 feet when fired from this gun.

All the various models of the BF Pistols (as well as the rifle) come with gold-plated triggers having a 24- to 32-ounce pull and can be adjusted for overtravel. Shooters have a choice of regular or hooded front sights with a variety of posts; Williams and RPM rear sights are available. Customers can also opt to omit the sights and simply mount a scope since all barrels come drilled and tapped for sight or scope mounting with filler screws plugging any holes not in use.

Buyers also have a choice of nonglare matte blue or

electroless nickel finish on their guns, with the latter protecting against rust as well as being "slick" for smoother-working actions. The electroless nickel finish is available on all models for an additional $100.

Stocks are oil-finished walnut, custom designed by Herrett. The forend is dovetailed so it stays in place on the barrel. Older models of the BF Pistol made before E. Arthur Brown Company took over production can be retrofitted and repaired to the new configurations. These older models are easily recognized by their grooved, squarish forend.

SPECIFICATIONS FOR BF PISTOL

Model	Length	Weight (Unloaded)	Barrel Length
Ultimate Silhouette	16.5"	3.98 lbs.	10.75" (12 and 15" optional)
Varminter	20.75"	4.25 lbs.	15"
Blunderbuss	15.75"	3.90 lbs.	10"

MAXIMUM

The Maximum single-shot pistol was introduced in 1983 and is marketed by the M.O.A. Corporation. The falling-block action of the pistol operates with a lever-action assembly not unlike that of 1800s-style carbines. This, coupled with the single-action revolver styling of the grip, makes the Maximum appear to be a gun that would have been at home in the 1880s, even though it was made a century later.

The styling may tend toward the antique, but the pistol itself is anything but. The quality Douglas barrel offers peak accuracy and is drilled and tapped for the M.O.A. scope mounts. A high ramp sight sits at the front of the barrel, while the rear sight is adjustable for windage and elevation.

Buyers have options of 8.75-, 10.5-, and 14-inch barrels and a choice of blued or stainless receiver. Extra barrels can also be purchased and are easily exchanged

by the shooter. The grip and forend are smooth walnut.

Chamberings include .22 LR, .22 Hornet, .22 BR, .223 Remington, .22-250, 6mm BR, 6mm-223, .243, .250 Savage, 6.5mm-35, 7mm TCU, 7mm BR, 7mm-35, 7mm INT-R, 7mm-08, 7mm Rocket, 7mm Super Magnum, .30 Herrett, .30 Carbine, .308 Winchester, 7.62x39mm, .32-20, .357 Magnum, .357 Maximum, .358 Winchester, and .44 Magnum. Other chamberings are available on a custom basis, though the manufacturer reserves the right to reject a chambering if the company feels the cartridge is too powerful to be handled easily by a shooter. Price tags for these guns run around $620 to $680, depending on the configuration. Scope mounts cost $52, while extra barrels sell for $164 for blued steel or $222 for stainless steel.

SPECIFICATIONS FOR MAXIMUM

Model	Length	Weight (Unloaded)	Barrel Length
Maximum	15"*	3.81 lbs.+	8.75, 10.5, or 14"

* Length with 10-inch barrel
+ Weight with 10-inch barrel

THOMPSON/CENTER CONTENDER

In 1965, Warren Center, a 50-year-old draftsman and design engineer who had started building handguns at 15, set out to create a target pistol of his own design. Center had just the background needed to create a firearm. He'd been trained as a draftsman and learned the ins and outs of machine shop operation. He enjoyed target shooting and had worked for several firearms companies, where he improved firearms as well as made them. In 1950 he quit his job with Iver Johnson to work as a gunsmith and builder of custom rifles before taking on a job in 1952 with Harrington & Richardson, where Center rubbed elbows with a number of designers, including

Eugene Reising, the inventor of the Reising submachine gun.

During his years of working in the gun business, Center had come up with several designs of his own but never had any luck in interesting a manufacturer in them. Finally, in the late 1950s, he purchased a lathe and milling machine which he operated in his home during his spare time, producing one-of-a-kind firearms that would eventually lead to the Contender pistol. Little by little, four prototypes were milled out of steel stock.

Despite the fact that the Remington XP-100 would soon be introduced and sell like hot cakes, all the manufacturers Center showed his prototype pistols to apparently assumed that the American public wouldn't be interested in a single-shot pistol. Failing to find a backer, Center checked into having manufacturers produce the parts for him so he could then assemble pistols on a custom basis. To his disappointment, he discovered the costs for such a project were prohibitive. After exhausting all the possibilities, he tabled his hopes to get the gun into production and continued his good job at H&R.

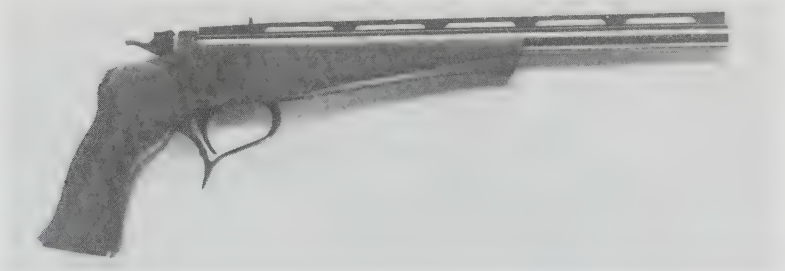
Then he got his proverbial lucky break.

Kenneth Thompson was a tool maker who created an investment casting/mold construction business, operating at first from a garage he'd converted into a small tool shop. Little by little his business grew until he had a huge operation.

But his markets were seasonal. One part of the year Thompson had more work than he could handle; the rest of the time it was difficult to keep all his employees busy. He started putting out feelers for a new tool or other product that he could purchase which would allow his workers to build doing slow times, taking up the slack from one big job to the next.

In 1965, one of Thompson's workers told him of an odd pistol he'd seen an inventor shooting at a range, mentioning the fact that the gun hadn't gone into pro-

The Thompson/Center Contender has changed little over the years, with the most noticeable modifications being to the gun's grip. Shown here is a current-production Hunter model with a muzzle brake and sling. (Photo courtesy of Thompson/Center Arms.)



A Super 14 Contender chambered for the .45/.410, sporting iron sights and a ventilated rib. (Photo courtesy of Thompson/Center Arms.)

duction anywhere. Thompson contacted the inventor, none other than Warren Center. The two set up a meeting for a demonstration of the pistol.

Thompson was so impressed when he met the inventor and saw the gun that he asked Center to head up the project to put the new pistol into production. The new gun, the Thompson/Center Contender, bore both

Super 16 Contenders with standard and ribbed barrels. Notice the forward placement of the rear sights with this configuration. (Photo courtesy of Thompson/Center Arms.)

Short-barreled Contender with rear sight in down position. (Photo courtesy of Thompson/Center Arms.)

Standard Contender with adjustable rear sight. (Photo courtesy of Thompson/Center Arms.)

men's names, with Thompson suggesting the "Contender" moniker since their gun would be competing with the XP-100 for a share of the target shooting and hunting market that had materialized for accurate, single-shot pistols.

Starting the new gun-manufacturing operation from scratch took Center two years to carry out, even with much of the machinery already on hand at Thompson's plant. But neither man was in a big hurry since Thompson's business was established, and both wanted the newest of production methods to be employed. The first Contenders finally left the production line in 1967. At first sales were slow; despite the quality work that went into the assembly of the pistols, fewer than a thousand sold that first year. But the gun was starting to gain a reputation, and a 7mm TCU barrel quickly proved its potential for winning metallic silhouette contests. Soon these target shooters were buying more Contenders than XP-100s.

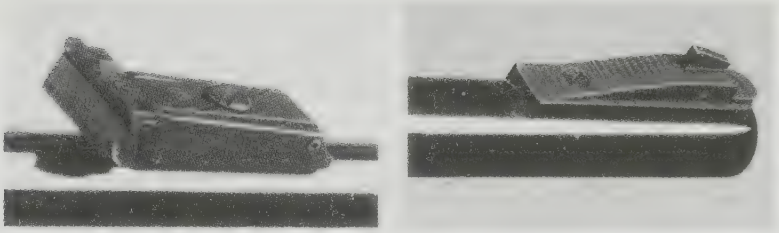
As the gun business grew, Thompson and Center decided to expand, filling in market niches that the big companies were afraid to tackle. One such area the two settled on was the black powder gun market. At the time Thompson/Center Arms decided to go into this

area of the marketplace, the only muzzle loaders being sold in the United States were imported from Italy.

The decision to create a new product made, Center went to the drawing board and soon had a falling-block design for a black powder rifle in hand. The result was the Hawken rifle, introduced in 1970. The company's timing was perfect, and sales of the new gun took off. Building on the success of the Hawken rifle, Thompson/Center Arms added other blackpowder guns, all designed by Center, to its line. And the Contender also started to catch on with a wider range of shooters as satisfied owners starting telling others about the gun.

By 1970, Center decided to upgrade the company's firearms equipment in order to keep up with demand. One of these changes came in the production of the Contender's barrels. The original guns were assembled using Douglas barrels; using barrels produced in-house would speed up production and lower the price charged for assembled pistols. By the mid-1970s, Thompson/Center Arms produced its own barrels

Quick-change barrels make it possible to fire a variety of cartridges from a Contender. (Photo courtesy of Thompson/Center Arms.)



The rear sight (left) on the Thompson/Center Contender is screw adjustable for windage and elevation. Front sight has ramps to help prevent glare. (Photo courtesy of Thompson/Center Arms.)

A few of the many Thompson/Center single-shot carbines, all based on the Contender pistol action. (Photo courtesy of Thompson/Center Arms.)

thanks to the reamers, drills, and other machinery Center had added to the production line, with CNC (computer, numerically controlled) machines helping to automate the process.

Thompson died in 1978, but by now the company

was so well-established that it continued on, a testament to the planning the founder had put into the day-to-day operation of the business.

The year 1983 saw the production of the TCR, a single-shot rifle based in part on the Contender's design but beefed up to contain the higher pressures of large hunting cartridges. This gun underwent a number of design changes in 1987 to become the TCR 87.

Center continued to add other guns and shotguns to the company line until he retired in 1986. Even after retirement, the inventor continues to have a hand in products that leave the assembly line at Thompson/Center Arms from time to time.

The first of his early pistols in 1967 had 10-inch octagon barrels, with 8.75-inch octagon barrels available as an option. Chambers included .22 LR, .22 Magnum, .22 Jet, .22 Horton, and .38 Special. These early guns are nearly identical to today's production pistols, though there have been minor changes through the years in the design of the bolt, firing pin selector, and pistol grip and fore-end designs.

The biggest changes in the Contender section of the company's catalog took place with its barrels. Lengths have varied from 6 to 16 inches or longer over the years, with at least 45 different chamberings appearing at one time or another in the catalog. (The Thompson/Center Collectors Association claims that 61 different production chamberings have actually been offered over the years, with countless more being made on special order through the Thompson/Center Arms' Custom Shop. Additional chamberings have been available through aftermarket companies, making the choices of rounds for the Contender even greater.)

The cartridges offered by Thompson/Center Arms have varied from the small varminting rounds Center originally envisioned for his pistol up to the .30-30 and even the gargantuan .45-70. These various chamberings

permit employment of the Contender on everything from iron plates to woodchucks to elephants as well as birds and skeet targets (the latter two thanks to the .45 Colt/.410 barrel).

What chamberings will be available in the future is anyone's guess. The decision will undoubtedly be made based on the best guesses of the powers at Thompson/Center Arms as to what will sell, factoring in past sales figures as well as current trends. At the time of this writing, the cartridges in production include the .22 Short/Long/Long Rifle, .22 WMR, .22 Hornet, .223 Remington, .30 Carbine, 9mm Luger, 7x30 Waters, .32 H&R Magnum, .32-20 Winchester, .357 Magnum, .357 Remington Maximum, .44 Magnum, 7mm TCU, .30-30, and .45 Colt/.410 Shotgun.

Four barrel lengths are currently available: 10, 12, 14, and 16.25 inches (with a 21-inch barrel available for use with rifle versions of the Contender). Octagon, standard, ribbed, and bull barrels are available for various chamberings and lengths. Barrels firing high-recoil cartridges are often seen with a Muzzle Tamer, which is a series of holes drilled toward the muzzle of the barrel. This acts as a muzzle brake to reduce recoil and muzzle flip.

The .45/.410 barrel has a screw-in internal choke that can be employed with shot shells to reduce the pattern size. Obviously when firing standard ammunition, this choke must be removed with the key provided with the barrel. Failure to do this won't destroy the gun, but it will damage the bullet, ruining accuracy. Protracted use would likely damage the choke, and lead buildup might create a dangerous situation. (Rifle versions of the Contender also have a 21-inch smooth-bore barrel available for use with .410 shells.)

Changing barrels on the Contender is fairly straightforward. First remove the forend by unscrewing the bolt (bolts on longer barrels) holding it to the barrel, push out the barrel pin, remove the old barrel, and

place the new one on the frame. Replace the pin and screw the forend back in position and the gun is now ready to fire in the new chambering. When switching back and forth from a rimfire to centerfire barrel, changing the hammer's firing pin selector by clicking it into the proper position is also necessary. These operations take about as long to read about as to perform.

The firing pin selector can be used as a manual safety by placing it in its center "safe" position. Contenders also have an automatic internal safety that prevents them from firing if the barrel isn't locked into position or the trigger isn't being pulled. This gives the shooter a number of options and a high degree of safety when carrying the pistol.

The Contender's single-action trigger is grooved and has a screw adjustment for overtravel in the rear of the trigger guard. The hammer is wide and cross grooved for easy cocking. (For shooters with scopes, a hammer extension is sometimes used to permit easy engagement of the hammer.)

Pulling back the spur on the trigger guard releases the action. As the barrel tilts downward, the extractor automatically engages the cartridge in the chamber and extracts it. This permits quick reloading of the pistol without losing the brass—an important plus for those who will later reload the cartridge.

All barrels come with iron sights, and 16.25-inch barrels have two different screw hole locations. These can be useful for those with older eyes who have trouble focusing when the rear sight is too close. The dual positions are also useful for bringing the rear sights back in the carbine configuration of the gun. Sights on ribbed barrels are similar to those on a shotgun, with the rear being fixed and the front being a bead. The rear sight can also be flipped down so just the bead can be employed for aiming shotgun-style. Other barrels have sights with windage and elevation adjustment screws

on the rear sight and a full-sized ramp front sight; the rear and front sights on these barrels are easily removed for shooters wishing to use only a scope on their Contenders.

Two replacement sights are offered by Thompson/Center Arms. The peephole sight is designed to be used on Contenders converted to the carbine configuration. The other rear sight is a deluxe version designed for silhouette shooters; it has a large elevation knob and a knurled windage adjustment knob, both of which do away with the need to use a screwdriver when adjusting the sight. This latter sight is available in two versions, one for 10-inch barrels and the other for 14-inch barrels. All barrels, including ribbed models, come drilled and tapped for easy mounting of scopes (with the screw hole for the rear sight doubling as the rear mounting hole for sight).

Thompson/Center Arms carries not one or two but three different scope mount systems for the Contender. The Rail Mount system is designed for the rails on the base found on many of the company's scopes. This system does away with the need for rings on the scope. The QR (Quick Release) system can be used with almost any 1-inch scope and permits quick removal of the scope so the iron sights can be used. The Duo-Ring mounts consist of a base with two heavy-duty rings; this permits a very secure lockup of the scope since the rings are a solid, integral part of the base itself.

In addition to blued steel guns, Thompson/Center Arms has recently added stainless steel models of the Contender to its lineup. These guns are generally seen with black Zytel grips and forends rather than the "traditional" walnut stocks found on blued guns. Because the dimensions of the blued and stainless guns are identical, stocks, barrels, and frames can be interchanged between models. The Alloy II frames

and barrels offered by Thompson/Center Arms for a short time are *not* interchangeable with the blued and stainless steel models.

Forends need to be kept with the style and length of barrel they were designed for since the 10-inch barrels are joined with one bolt to the forend while the longer barrels are joined to their forends with two bolts. This, coupled with differences in barrel diameter, makes quite a variance of forends from one barrel to the next, so care has to be taken to purchase the correct one when altering the configuration of a pistol.

Only one style of walnut forend is offered for the octagon 10-inch barrel. The 10-inch bull barrel and ventilated ribbed barrels give the buyer a choice of a similar walnut forend or a black Rynite forend. A narrow-style walnut as well as an identically configured black Rynite forend are available for two-bolt Hunter, Super 14, and the 16.25-inch .45-70-chambered barrel. All the other 16.25-inch barrels use either the thicker Rynite or walnut forends.

The original Old Style grip for the Contender had a semi thumbrest contour with a small checkered section on its sides. This proved to be less than ideal for the greater recoil larger cartridges generated. This was soon replaced by smooth walnut grips designed by Steve Herrett. These are still available but are not as ideal as newer grips with rubber inserts when dealing with the greater recoil of some of the heavier-recoiling chamberings.

Consequently, there are currently three styles of grips offered by Thompson/Center Arms. These include Herrett's finger-groove, all-walnut grip having a thumbrest (and available in left- or right-handed models), the Competitor grip of walnut with a neoprene insert along its rear quarter, and the Rynite black plastic grip, also with a neoprene insert down its back. Grips are easily exchanged by removing the

baseplate and then unscrewing the bolt holding the grip to the frame.

Choate Machine & Tool offers several styles of stocks for rifle versions of the Contender as well as a flash hider to bring the pistol barrel up to the legal minimum length to conform to U.S. federal law. Thompson/Center Arms also markets a pistol-to-rifle conversion kit. This kit led the company into a legal headache shortly after it was introduced.

Theoretically, it's perfectly legal to transform a pistol into a rifle (but not vice versa) in the United States, provided the overall dimensions conform to the proper lengths. Consequently, Thompson/Center Arms began selling a kit consisting of a stock and either a 16.25- or 21-inch barrel with forend for shooters who wanted to create an accurate, handy rifle using their own pistol action to complete the gun. Provided the shooter didn't mount a barrel shorter than 16 inches on the "rifle," everything was legal.

But this didn't seem to satisfy the BATF, which, from time to time, has agents who appear to get hyper when lawbreakers are scarce. In 1985, the BATF announced that Thompson/Center Arms had violated the National Firearms Act (requiring makers of a rifle having a barrel shorter than 16 inches to pay a $200 tax per weapon and register it with the government). According to BATF, the company was manufacturing short-barreled rifles, which, because of their special designation in the law, require a special license to make and a tax on each gun that leaves the factory. Company officials were abruptly facing huge fines and charges for back taxes, and some of the company's customers might have been looking at fines of up to $10,000 and a prison term of up to 10 years for possessing a short-barreled rifle.

The case eventually went to the U.S. Supreme Court, where several justices openly scoffed at the BATF's contentions. On June 8, 1992, the court voting 5-4, exempt-

ed the Thompson/Center Arms from having to register its kits as short-barreled rifles, paying a tax on the kits, or paying any fines for producing the kits already sold.

Justice Antonin Scalia, writing in an opinion for himself and Clarence Thomas, said that the federal law's definition of a pistol intended to be fired from the shoulder is ambiguous and added that the benefit of the doubt should go to the gun manufacturer, just as is the case with most other points of law where interpretations should be more liberal rather than strict when the laws are ambiguous (*U.S. vs. Thompson/Center Arms Co.*, 91-164).

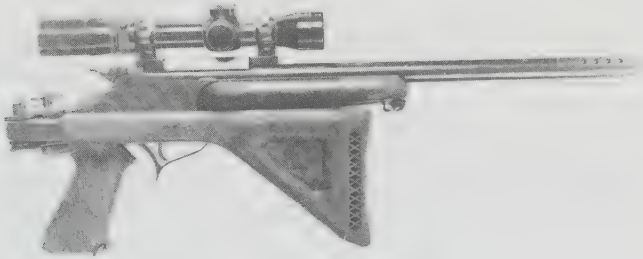
Of course, this doesn't mean that you can put a stock on a Contender with a short barrel; this case only decided that Thompson/Center Arms hadn't been making short-barreled rifles by selling the conversion kits. The basic law still applies, and a stocked Contender with a barrel shorter than 16 inches could land its owner in jail. Obviously, the key is to place only 16-inch or longer barrels on a Contender having a shoulder stock attached to it.

Thompson/Center offers two lengths of stocks for converting a Contender to a carbine. One is walnut and has a 12-inch pull suitable for smaller shooters; the other is a full-length stock and is available in both walnut and black Rynite. Matching walnut and Rynite forends are also available to go with these stocks. To keep things legal, either the 16.25-inch or 21-inch barrels should be mated to Contenders in a carbine configuration.

Choate Machine & Tool manufactures the Rynite grips, rifle stocks, and forends for Thompson/Center Arms. Choate also markets its own line of accessories, including two styles of rifle stocks with rubber recoil pads. Cost is $57 for the black-finished versions, with cammo-finished stocks running $64. There are two styles of these: one has a pistol grip similar to that found on an AR-15 rifle; the other is a conventional-style stock like that offered by Thompson/Center Arms.

Thompson/Center Contender with Choate conventional-style stock. (Photo courtesy of Choate Machine & Tool.)

Choate pistol grip stock on Thompson/Center Contender. (Photo courtesy of Choate Machine & Tool.)



Choate folding stock on Thompson/Center Contender. (Photo courtesy of Choate Machine & Tool.)

A pistol-grip folding stock is also offered by Choate. Made of steel and plastic with a rubber recoil pad, this sells for $81 with a black finish or $88.50 for a cammo finish. Choate carries matching ABS plastic forends fitting the 7/8-inch diameter 14-inch bull barrel or tapered 16.25- and 21-inch carbine barrels. These

carry price tags of $14.50 for black-finished forends or $19 for a cammo finish. Both one-hole and two-hole forends are available.

For those wanting a flash hider on the barrel of a Contender, Choate has one that fits the 14-inch bull barrel. This can be used to extend the barrel to 16 inches, permitting it to be used with a carbine stock *provided* the flash hider is welded permanently to the barrel to conform to federal regulations. Cost is $23.

In addition to the actual barrels and other components for the Contender pistols, Thompson/Center Arms carries a huge array of accessories, including slings, holsters, storage cases, belt buckles, knives, caps, and other odds and ends, all displaying the company's logo. Loyal Contender owners are often seen on the shooting range decked out with the company's products.

A quick look at past shooting contest results shows why the Contender inspires such loyalty among its fans. In the IHMSA and NRA metallic silhouette contests, over 80 percent of the record scores made in the Production Class have been fired with 10-inch Contenders. On good days, skilled shooters can put their shots into groups of less than 2 inches when firing at 500-yard targets. The Contender obviously offers outstanding accuracy.

In addition to the large number of T/C brand scopes available to him, a shooter can purchase what is very nearly a custom pistol with a choice of chambering, barrel length and contours, stainless steel or blued finish, and type of grip and forend, complete with the scope and carrying case for it. Total retail price for such a "custom" setup runs around $325 to $425 (depending on the options), with spare barrels running around $150 each. Compared to the costs of true custom pistols, this price is very hard to beat.

This combination of flexibility and reasonable prices makes the Contender a good choice for those wanting a

specialized gun as well as a versatile system that can be modified into a variety of configurations and chamberings. Little wonder the Contender has become the first choice of many who purchase a hand cannon.

SPECIFICATIONS FOR T/C CONTENDER

Model	Length	Weight (Unloaded)	Barrel Length
Contender	13.25"*	2.68 lbs.+	10, 12, 14, or 16.25"

* Length with 10-inch barrel
+ Weight with 10-inch barrel

X-CALIBER

The X-Caliber is similar in layout to the Thompson/Center Contender and was marketed for a short time in the late 1980s by Ithaca before the company went out of business. Following this setback, Remington purchased the Ithaca plant, bringing out the Model 37 shotguns through the reorganized Ithaca Acquisition Corporation.

Along with the Ithaca shotguns, the X-Caliber pistol was reintroduced after the new Ithaca company went back into business, with some parts being produced at the old Sterling Arms company plant at Longport. These new versions of the X-Caliber were re-engineered from 1991 to 1993 to enable them to fire centerfire cartridges as well as rimfire .22s. Pistols made after this time have interchangable barrels and one firing pin that will do double duty, firing both centerfire and rimfire cartridges.

Two models of the X-Caliber are currently offered. The Model 20 has a Goncalo Alves grip and matching forend coupled with a blued finish. The Model 30 features walnut furniture and a matte Teflon finish. Both come with a sling and have a dual firing pin for either rimfire or centerfire cartridges. The break-open action accommodates interchangeable barrels, though none

appear to be offered by Ithaca at the time of this writing. Barrel lengths include 10 and 15 inches, while chamberings include .22 LR, .223 Remington, .35 Remington, .357 Magnum, .357 Maximum, and .44 Magnum. Company officials hope to eventually expand the offering of X-Caliber guns to 10 different chamberings.

The front sight on both models of the X-Caliber is a stepped ramp. The Model 20 has an adjustable, removable rear sight, while the Model 30 has a step-adjustable rifle-style rear sight and is grooved for scope mounting.

SPECIFICATIONS FOR X-CALIBER

Model	Length	Weight (Unloaded)	Barrel Length
Model 20	15"*	3.25 lbs.+	10 or 15"
Model 30	15"*	3.25 lbs.+	10 or 15"

* Length with 10-inch barrel
+ Weight with 10-inch barrel

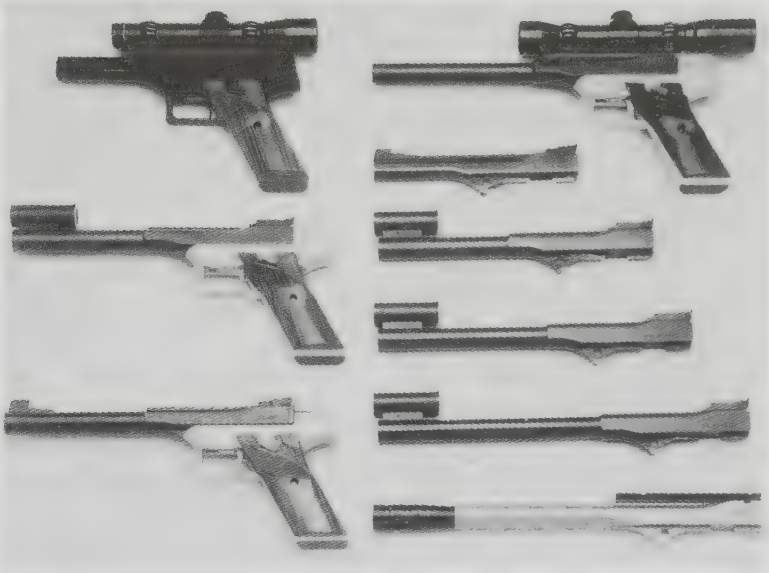
RPM XL

The XL pistol has the contours of an automatic, looking at first glance somewhat like a High Standard .22 pistol. In fact it is a single-shot with a break-open action. The basic design of the XL has been around for nearly 45 years and was originally known as the Merril Pistol, first built in 1948. Rights to this design were purchased in 1978 by Jim Rock, who upgraded and improved it, marketing it as the XL. Since its introduction, this hand cannon has won a number of trophies at international contests, proving the merit of its design.

Handcrafted XL pistols are available in over 50 chamberings, from .22 LR on up to .45-70, with the more popular being the .22 LR, .22 WMR, .225 Winchester, .25 Rocket, 6.5 Rocket, .32 H&R Magnum, .357 Magnum, .357 Maximum, .30-30 Winchester, .30 Herrett, .357 Herrett., .41 Magnum, .44 Magnum, .454 Casull, .375

Winch., 7mm UR, 7mm Merrill, .30 Merrill, 7mm Rocket, .270 Rocket, .270 Max., and the .45-70.

If this weren't enough, other chamberings are available according to the wishes of the purchaser. Barrels are precision matched to the action of each pistol. Hard chrome finish is available for the frame and/or the barrel assemblies.



Just a few of the many variants of the XL pistol. (Photo courtesy of RPM.)

Barrel lengths include an 8-inch, slab-sided barrel; 10-, 10.75-, and 12-inch standard barrels; and a 14-inch bull barrel. Extra barrels are available for the XL pistol but must be fitted to the action. Cost for an 8- to 10.75-inch barrel is $180, while a longer barrel retails at $250. All barrels are drilled and tapped for scope mounting.

A thumb safety is located on the left side of the grip. It is always engaged except when the pistol is being held and pressure is applied to the safety lever. This

safety design dictates left- and right-handed models of the pistol. A cocking indicator visible from the rear of the gun adds an additional bit of safety. The action cocks when it is opened for loading. The trigger is externally adjustable for weight of pull as well as overtravel.

The XLs are available without sights for those planning to mount a scope on their pistols. The pistols are also offered with adjustable rear sights, and two styles of front sights are sold: standard patridge style and a hooded front sight.

Although there aren't a lot of XLs in circulation, the pistols are getting their share of high scores in shooting contests. RPM claims that one of its customers, using an XL pistol, has set more than 70 NRA national records all by himself.

SPECIFICATIONS FOR XL

Model	Length	Weight (Unloaded)	Barrel Length
RPM XL	12.25"*	3.75 lbs.+	8, 10, 10.75, 12 or 14"

* Length with 10.75-inch barrel
+ Weight with 10.75-inch barrel

Revolver Hand Cannons

CHAPTER 3

Guns like the Remington XP-100 and the Thompson/Center Contender are the hand cannons of choice for many varminters and target shooters. But in terms of raw power, the first modern hand cannons were the revolvers chambered for the .44 Magnum. These guns set the stage for the modern hand cannons that followed.

It is popularly assumed that the Smith & Wesson Model 29 was the first revolver created for the .44 Magnum, a logical outcome since the company worked with Remington for some time to create the new cartridge and a firearm for it. In fact, the first revolvers shipped to dealers chambered for the .44 Magnum weren't coming out of the Smith & Wesson factory.

The exact particulars of how this came to pass are a little shady. Those close to Sturm, Ruger & Company tell of an employee who brought in an odd cartridge he'd discovered at a scrapyard. The casing was similar to that of a .44 Special but about an eighth of an inch too long. After learning of his employee's find, and no doubt aware of suggestions by many gun writers and others that a more powerful cartridge could be created

around the .44 Special, William B. Ruger, the owner of Sturm, Ruger & Company, did some sniffing around.

Ruger soon discovered that the new round was indeed being developed and that Smith & Wesson was planning on creating the first revolver for it. Ruger apparently initiated a crash program to rework his Blackhawk revolvers slightly to accomodate the new round—and the race was on.

In the end, Ruger was shipping its .44 Magnum pistols a few months ahead of Smith & Wesson. So while S&W generally gets credit for the first revolver chambered for the .44 Magnum, it was actually Sturm, Ruger & Company that had the first such guns in the field.

Improvements in design and manufacturing techniques over the last few decades have given revolvers accuracy that often rivals that of single-shots, making these repeaters capable of handling a wide range of tasks. Shooters wanting a gun that can be fired rapidly if pressed into service as a defensive weapon can readily see the advantage of a firearm that spits out lead with each pull of the trigger without the need to break open the action and reload with each shot.

Of course there are limits to the cartridges a revolver can handle. Bottleneck rounds have never performed well in revolvers, and the few such guns that have been fielded proved to be dismal failures due to the bleeding of gas from the narrow space between the front of the cylinder and the forcing cone. Too, bullets from bottlenecked cartridges tend to "upset" when traveling down the forcing cone, making accuracy far from precise when the deformed bullet reaches its destination downrange.

These limitations may soon be overcome. One manufacturer has recently fielded a revolver with a cylinder long enough to accommodate a .410 shotgun shell. While this revolver is designed as a snubbie hideout gun, it isn't hard to imagine it with a longer barrel and a

(perhaps not yet created) long cartridge with a .44-caliber bullet. But until that time, revolvers are limited to cartridges that are short enough to fit current-production cylinders.

That's not to say the cartridges currently available are anemic—they're anything but. And the cartridge that started it all has held up well, often offering all the power that shooters who want a revolver hand cannon need.

Based on the earlier .44 Special, the .44 Smith & Wesson Magnum was inspired by Elmer Keith and other gun writers of the 1950s who were interested in the maximum accuracy, range, and power that could be produced by a revolver round. Smith & Wesson's heavy-framed Model 29 revolver, fielded in 1955, proved to be a handful—more than many shooters cared to handle. (For less strenuous practice, the .44 Special could be fired from .44 Magnum revolvers—a procedure many a shooter follows even today to avoid developing a flinch and/or putting undue wear on the gun.)

The .44 Magnum round presented mechanical problems, and more than a few of the early revolvers digesting a steady diet of these powerful pills were soon at the gunsmiths for a general tightening. Nevertheless, these guns proved capable of downing big game. Soon, handgunners were chalking up black bear, deer, elk, and even moose with the new cartridge.

Since the .44 Magnum's introduction, other cartridges rivaling or even exceeding it have been fielded. Among the more common is the .454 Casull (also known as the .454 Magnum Revolver) developed by Dick Casull in 1957. This cartridge is based on slightly lengthened .45 Colt brass. A number of Ruger and Colt revolvers were altered to accommodate this cartridge, but the most common modern revolver using it is the Freedom Arms single-action Casull revolver designed specifically for it.

Freedom Arms also offers ammunition for its revolver for those who wish to avoid reloading the round from scratch. Just as shooters of the .44 Magnum can use .44 Special cartridges for practice, those employing the .454 Casull can fire .45 Colt for less violent practice.

When the .44 Magnum and .454 Casull are compared ballistically, the Casull cartridge has a slight edge. But this is only when it is loaded to its hottest ballistics. Many shooters find that the .44 Magnum, with a wider selection of revolvers chambered for it and a great variety of factory ammunition available, is a more practical solution to their need for a hand cannon.

A relatively new wildcat cartridge that some of the Wesson revolvers are chambered for is the .445 SuperMag. This cartridge is based on elongated .44 Magnum brass and shoots standard 240- and 300-grain .44 bullets. Brass can be custom-made for this round by the shooter or purchased from companies like E. Arthur Brown. When loaded to the maximum safe level, the .445 SuperMag also enjoys a slight edge over the .44 Magnum, coming in at around the same ballistics as the .454 Casull.

The .475 Linebaugh made its appearance in 1988. The brainchild of John Linebaugh, this cartridge offers what might be the highest yet muzzle energy, with some handloads using 440-grain bullets said to develop 1,800 fpe. A wildcat cartridge, the .475 Linebaugh is created by cutting off a .45-70 case to 1.5 inches and topping it with a 320- to 440-grain bullet. Currently, no mass-produced revolvers chambered for this cartridge are out there, though Ruger Bisley revolvers customized with an extra-strong 5-shot cylinder have been produced to show the practicality of this round.

The mechanical requirements for a strong revolver action suggest that the .454 Casull, .445 SuperMag, and

.475 Linebaugh are near the upper limits of power for this type of firearm. But whether these "top out" that power curve remains to be seen, and it seems likely that revolver users may soon follow the route taken by those firing automatics—enlarging the diameter of the cartridge to increase the size of the bullet and its weight for greater power. It may be that we'll soon see a rimmed version of the .50 Magnum/Action Express that's already being used in semiauto hand cannons fielded for revolvers.

In its most powerful loads, the .357 Remington Maximum barely enters the hand cannon range of cartridges. This cartridge was created as a joint project between Sturm, Ruger & Company and Remington Arms in the 1980s. The Ruger Blackhawk chambered for the round appeared in 1983, followed in 1984 by a double-action Dan Wesson revolver and a Thompson/Center barrel.

The .357 Maximum is based on elongated .357 Magnum brass and develops muzzle energy from 727 to 1,168 foot pounds from a 10-inch barrel. But despite the potential the .357 Maximum has on paper, it proved less than ideal in revolvers. Gas erosion became excessive in the gap between the forcing cone and cylinder after just 1,000 rounds. Consequently, Ruger withdrew its revolver from production, and Dan Wesson started offering a spare barrel with its .357 Maximum gun, with special discounts available for customers needing a third barrel later on.

The .357 Maximum has a lot of potential as a silhouette cartridge due to its flat trajectory, and it could arguably be pressed into service as a hunting round for deer and similar game. But until the problems with gas erosion are overcome, it is useful only in single-shot pistols unless shooters are willing to put up with firing it infrequently or replacing the barrel every so often.

All of these cartridges, as well as others that may

soon be fielded, fall far short of many of the rounds available for single-action guns. Shooters following the siren call for maximum power with no need for a rapid second shot are best served with a firearm other than a revolver. But for those wanting a multishot weapon that offers more power than the run-of-the-mill .38 Specials and .357 Magnums coupled with the possibility of quick follow-up shots if they're needed, the revolvers discussed in this chapter can be just the ticket.

One other quirk of revolver actions should be noted—double- and single-action trigger pulls. Double-action revolvers give shooters the option of pulling the trigger when the hammer is down; this lifts the hammer, thereby cocking the gun, and then drops the hammer, all in one smooth movement. Single-action trigger pulls take place when the hammer is back; pulling the trigger simply drops the hammer and fires the revolver.

With the rare exceptions of revolvers that are designed for hideout use, double-action revolvers like those listed in this chapter can be thumb-cocked and the hammer dropped single-action style. On the other hand, single-action-only guns (like the Ruger Super Blackhawk) can *only* be fired in the single-action mode. Pulling the trigger with the hammer down won't fire a single-action revolver.

For maximum accuracy, many shooters of double-action revolvers will thumb-cock the hammer, firing the gun in the single-action mode. This makes shooting slower but reduces the force necessary to drop the hammer. Less force and a short trigger stroke translate into less movement of the firearm and greater accuracy. Single-action shots are almost always more accurate than double-action shots—an important plus in hunting or long-range target work. For this reason, many shooters will find that a double-action gun doesn't have much advantage over a single-action, especially given the few seconds often necessary to recover the sight pic-

ture following the massive recoil generated by the hand cannon cartridges listed in this chapter.

The exception to this might be for those who plan on using the revolver for self-defense, either some or all of the time. Double-action revolvers can engage multiple assailants much more rapidly than can single-action revolvers. With the double-action, the shooter aims at his target and fires without the need to thumb-cock the hammer before each shot.

On the other hand, most gunfights end with one or two shots. Theoretically, a person defending himself with a single-action revolver would be in about as good of shape as someone with a double-action since he can learn to thumb-cock the gun as its sights are brought onto the target, making the first shot occur about as rapidly as it would with a double-action revolver. The wildcard is that sometimes a shooter might find himself facing three or four assailants in close quarters; then a double-action revolver might make an important difference. Most people looking for a defensive gun don't want one that will be good most of the time; they want one that can deal with all problems quickly. For this reason, the double-action revolver is often preferred by those wanting a hand cannon that can serve double duty as a sporting arm and defensive arm.

(That said, most hand cannon rounds aren't as effective as their weaker counterparts because they are overly powerful, penetrating human targets rather than dumping all their energy in them. The solution to this problem is to use some of the milder loadings of the cartridge to make them more effective. Interestingly, among all the handgun rounds currently available, the .357 Magnum with hollow-point bullets has the best record as a fight stopper here in the United States.)

Things aren't entirely rosy with revolver actions. The mechanism is sensitive to dirt, so great care must be exer-

cised to keep them clean and lubricated while, at the same time, keeping all lubricants off the cartridges since oil can quickly deactivate primers and powder. Holster and carrying case selection is also important in order to keep these firearms clean and reliable.

If you're interested in using one of these revolvers for hunting or you have eye problems that create aiming difficulties with any handgun, then it makes sense to mount a scope on a revolver. While you can hire a gunsmith to mill off the top of the frame, drill and tap it, and add a mount to it, a better solution is to buy one of the many commercial mounts available for the guns in this chapter.

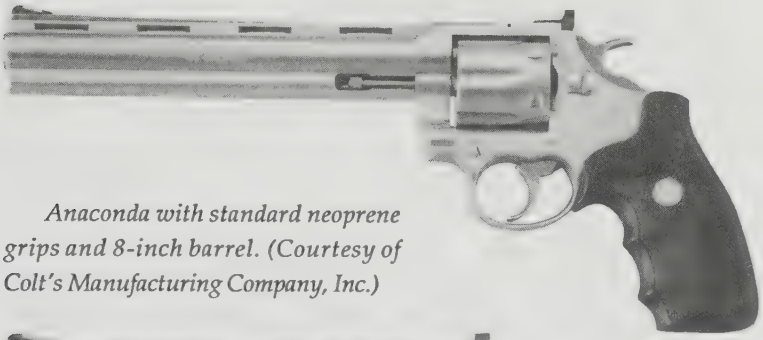
B-Square's no-gunsmithing scope mounts permit easy attachment of a scope without damaging the revolver and are available for removable-barrel Wesson revolvers with 6-inch or longer barrels, the Colt Python, and the S&W .44 Magnum revolvers with adjustable rear sights. And some guns come out of the box ready for scopes. The .44 Magnum versions of the Ruger Redhawk and Super Redhawk come with their own scope mount system, complete with rings that match the revolver's finish.

COLT ANACONDA

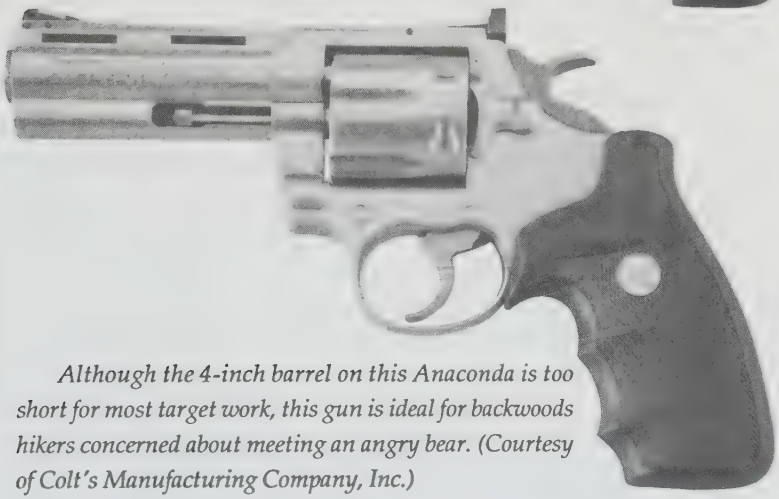
The Colt Anaconda, chambered for .44 Magnum or .45 Colt, is very similar to the company's Python and King Cobra revolvers, both of which are chambered for .357 Magnum. For those with plenty of cash to spend, this makes it possible to purchase an Anaconda for target or hunting use and a Python for self-defense, as both guns operate identically and have the same point of aim. The end result will be revolvers that feel "at home" in the shooter's hand no matter what round is being fired.

The Anaconda comes with Pachmayr rubberized grips. In addition to highly reflective blued and stain-

less finishes, a matte stainless steel finish is also available. This latter finish is ideal for hunting or defensive use, where reflected light can spook game or give away the defender's position.



Anaconda with standard neoprene grips and 8-inch barrel. (Courtesy of Colt's Manufacturing Company, Inc.)



Although the 4-inch barrel on this Anaconda is too short for most target work, this gun is ideal for backwoods hikers concerned about meeting an angry bear. (Courtesy of Colt's Manufacturing Company, Inc.)

Anacondas have barrel ribs and come with rear sights that are adjustable for both windage and elevation. A red insert is embedded in the front sight, but a gunsmith can replace this with a similar one in another color. The Anaconda revolvers are available with barrel lengths of 4, 6, and 8 inches.

The longer-barrel versions of the Anaconda come

with neoprene Target grips, while short-barreled revolvers have rubberized combat grips with finger swells. Most shooters find that the combat grips give better control of the revolver; these can be purchased from Colt and mounted on a revolver originally equipped with the Target grips.

Single-action pull on the Anaconda is around 4 pounds, with the double-action pull coming in around 12 pounds. Since most target shooters will be thumb-cocking the hammer for single-action shots, the trigger is grooved (which is less ideal for double-action firing) and the single-action pull is smooth and short.

Colt revolvers have a cylinder latch that releases with a rearward pull (rather than with a forward push or by depressing a button, as is the case with most other double-action revolvers). Some shooters believe this type of cylinder release is less likely to be engaged accidentally in the field.

SPECIFICATIONS FOR COLT ANACONDA

Model	Length	Weight (Unloaded)	Barrel Length	Capacity
Colt Anaconda	9.62"+	2.93 lbs.*	4, 6, or 8"	6

+ Length with 4-inch barrel

* Weight with 4-inch barrel

FREEDOM ARMS MODEL 454 AND MODEL 555

Freedom Arms offers a variety of Casull revolvers. All are single action and lack fluting on the five-chamber cylinder in order to increase the strength of that part. In addition to the .454 Casull chambering, the company carries revolvers chambered for .44 Magnum, .45 Colt, and .45 ACP, with an optional spare cylinder with the latter two revolvers so owners can switch between the two .45 cartridges. The similar Model 353 chambered in .357 Magnum would make a good com-

panion piece for shooters who want identical guns chambered for different cartridges.

In 1994, Freedom Arms introduced the Model 555. This revolver is nearly identical to its sisters but is chambered for the .50 Action Express. Since the cartridge is rebated, the round headspaces on the case mouth, so shooters reloading empty brass should be careful to keep the length of brass within its factory specifications.

A bewildering array of options is available for the Casull guns. Barrel lengths include a diminutive (and fire-breathing) 3 incher and longer barrels of 4.75, 6, 7.5, and 10 inches. The Field Grade guns have a matte finish and neoprene Pachmayr grips that help soak up recoil. More expensive Premier Grade guns have brush-finished surfaces and come with impregnated hardwood grips.

Purchasers have a choice of fixed or adjustable rear sights, and a scope mount is available on some models of the revolver, which come sans front sight for a clear sight picture. It's even possible to purchase the gun with a 2.5X Leupold scope, giving the shooter an out-of-the-box revolver that's ready to hit the field.

The fit and finish on these guns is very good. Of course, all the special features and finish cost money; currently, they carry retail price tags that start at a tad over one grand and go up to $1,711 for a decked-out Premier Grade revolver.

SPECIFICATIONS FOR FREEDOM ARMS 454/555 CASULL

Model	Length	Weight (Unloaded)	Barrel Length	Capacity
Model 454	14"+	3.12 lbs.*	3, 4.75, 6, 7.5, or 10"	5
Model 555	14"+	3.12 lbs.*	4.75, 6, 7.5, or 10"	5

+ Length with 7.5-inch barrel

* Weight with 7.5-inch barrel

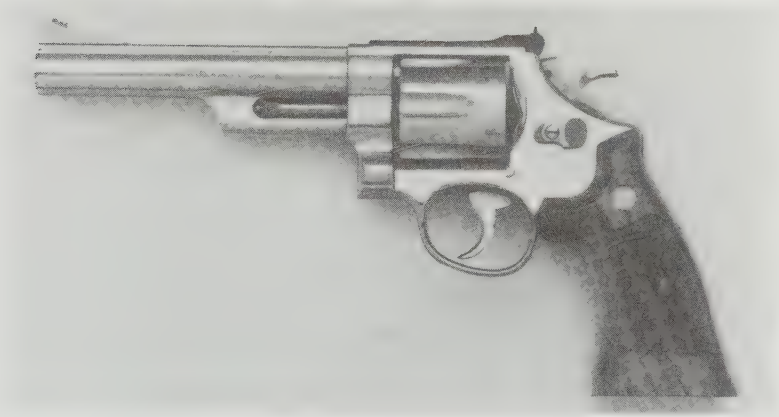
SMITH & WESSON MODEL 29/629

After a series of less-than-successful firearms ventures, Horace Smith and Daniel B. Wesson created a successful firearms business during the last half of the 1800s. The two inventors based their designs around the then-new metallic cartridge, building firearms that permitted quick reloading—something most other black powder firearms couldn't do successfully. The two then fought off the many companies stealing their designs, often getting court actions that permitted them to take over entire operations when it was ruled that the other businesses were infringing on the Smith & Wesson patents.

The .44-caliber cartridge became one of the company's mainstays in 1870 when the Russian government ordered large quantities of revolvers chambered for the round. When the call went out for a more powerful .44-caliber cartridge during the mid-1900s, Smith & Wesson already had a revolver for the new .44 Magnum cartridge fielded by Remington.

The .44 Magnum revolver was introduced as the Model 29 in 1956, and for many years it held the distinc-

S&W Model 29 with 8.37-inch barrel and standard grips. (Courtesy of Smith & Wesson.)



Stainless steel S&W Model 629 with 6-inch barrel. (Courtesy of Smith & Wesson.)

tion of being the world's most powerful handgun (a phrase that, after being delivered by Clint Eastwood in the first *Dirty Harry* movie, helped sell a lot of these handguns). The Model 29 has changed little over the years, with its basic design and grips remaining as they were when first introduced.

The Model 29 has a large frame (designated the N frame by S&W), which helps supply the strength needed to survive the battering of the powerful round. The added weight of the frame also soaks up recoil to minimize the thrashing a shooter takes when firing the .44 Magnum. Like other Smith & Wesson guns, this double-action revolver has been noted for its smooth trigger pull and quality fit and finish.

The Model 29 has a blued carbon finish. The nearly identical Model 629 is Smith & Wesson's stainless steel version of the revolver. The latest of the Model 29s has a grooved target trigger, ideal for single-action shots though less so for double-action work since the grooves slow the movement of the finger over the surface of the trigger face as it's pulled rearward. Those using a

Model 29 mostly in the double-action mode might want to consider having a gunsmith replace the trigger with a smooth-faced version, or they might want to simply purchase a Model 629 since the stainless steel version of the gun comes with a smooth trigger as a standard feature.

For those demanding the ultimate in performance, Smith & Wesson has several upgraded models of this .44 Magnum. First introduced in 1990, the Classic versions of the Model 29 and 629 feature chamfered cylinders for quicker reloading and have a full-lug barrel to increase the weight on the revolver's forward end to dampen recoil and barrel climb. The guns come with Hogue neoprene grips to further reduce felt recoil. The Classic models also have drilled and tapped frames to simplify mounting a scope.

The Classic DX was first marketed in 1991. This version of the revolver has all the features of the Classic model plus several extras, including a spare grip. This gives the shooter one more or less "standard" square-butt grip and one Hogue wooden combat-style stock with finger swells. Many shooters find the standard grip too large for their hands; the combat-style stock is often more comfortable. The Classic DX also comes with a set of five interchangeable front sight inserts. Like the standard Model 29/629, the Classic and Classic DX guns are available in both a blued-steel Model 29-style version as well as a Model 629 stainless steel version.

Introduced in 1994, the Model 629 Backpacker is sort of a hideout revolver for hikers with an eye toward dealing with surprised bear. The gun comes with Hogue neoprene grips. Their 2-inch barrels make them less than ideal for target work or even hunting, but for those looking for a compact .44 Magnum for self-defense, this is a possible choice.

All of the Model 29/629 variants have microclick adjustable rear sights. These allow very accurate adjust-

ment of the revolver, permitting a shooter to zero in on the target regardless of the type of ammunition he's firing. The matte finish on the top of these revolvers helps out in acquiring a sight picture in bright light, and the plastic insert in the front blade can be replaced if a shooter so desires.

For revolver users who need to reload rapidly, L.L. Baston offers an oversize thumb latch that fits the Model 29/629. The replacement latch is shaped to match the forward surface of the thumb, making it easier to release the cylinder. Cost is $24 for a blued latch or $25 for a stainless steel one.

SPECIFICATIONS FOR SMITH & WESSON MODEL 29/629

Model	Length	Weight (Unloaded)	Barrel Length	Capacity
Model 29	11.37+	2.9 lbs.*	6 or 8.37"	6
Model 629	11.37+	3 lbs.*	4, 6, or 8.37"	6
Model 629 Backpacker	7.37+	2.5 lbs.	2"	6
Model 29 Classic	10.5++	3.1 lbs.**	5, 6.5, or 8.37"	6
Model 629 Classic	10.5++	3.4 lbs.**	5, 6.5, or 8.37"	6
Model 29 Classic DX	10.5++	3.1 lbs.**	5, 6.5, or 8.37"	6
Model 629 Classic DX	10.5++	3.4 lbs.**	5, 6.5, or 8.37"	6

+ Length with 6-inch barrel
++ Length with 5-inch barrel
* Weight with 6-inch barrel
** Weight with 6.5-inch barrel

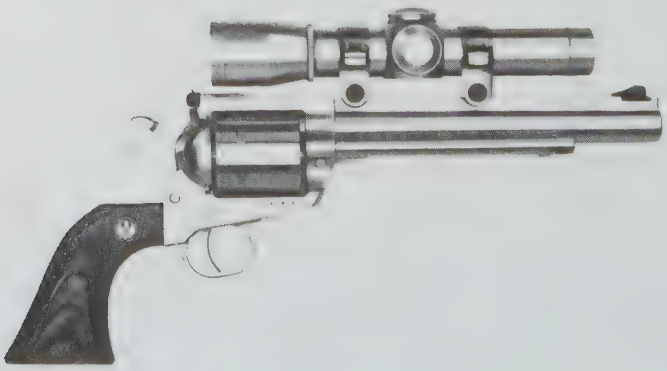
STURM, RUGER SUPER BLACKHAWK

Shortly after introducing its Blackhawk chambered for .44 Magnum, Sturm, Ruger & Company started working on a slightly larger version of the revolver that was better suited for the powerful cartridge. During this process, engineers enlarged the gun's grip slightly,

made the rear sight more protected by sections of the top strap, and added a square spur to the trigger guard. The end result was what would become the Super Blackhawk revolver.

Like its Blackhawk forebears, the Super Blackhawk fires only in the single-action mode. Reloading is slow since the loading port on the right of the frame has to be opened and rounds chucked out one at a time with a sliding ejector rod that rides under the barrel. These features make the Super Blackhawk inferior in terms of speed to more modern double-action revolver designs. The flip side of the slower reloading and single-action trigger is a robust revolver that keeps functioning after many more modern-looking firearms have worn out and are in the gunsmith's shop.

Of course, the "old-time" look of the Super Blackhawk is only skin deep. Inside Ruger has designed the gun with modern coil springs, and parts that were prone to breakage in the 1800s have been beefed up to last forever and a day. The Super Blackhawk also has an automatic hammer-block safety that permits the revolver to be carried with all the chambers loaded without danger of a round being fired if the gun is dropped.



The Hunter model of the Super Blackhawk comes with its own scope mount system. (Courtesy of Sturm, Ruger & Company.)

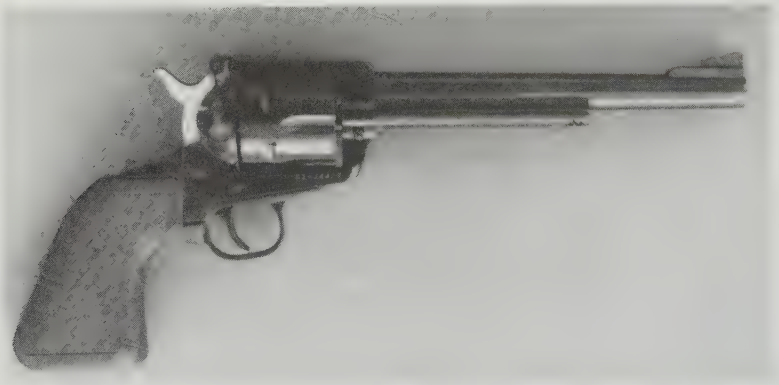
In addition to the standard blued models, Ruger offers stainless steel versions of its Super Blackhawk. For hand cannon users wanting to mount a scope on their revolvers, the Hunter model is a good choice. A heavy bar along the top of the gun's barrel has two grooves in it that accept the 1-inch rings included with the gun, which makes scope mounting a cinch.

Like other Super Blackhawks, the Hunter has an adjustable rear sight and blued front sight, making it easy to acquire a target when a scope isn't mounted. Unlike others in its family, the Hunter has a front sight that can be removed, its design being borrowed from the Super Redhawk series of revolvers. Another departure in its design is the use of tough, laminated grips and a rounded, rather than hooked, trigger guard (unlike that of other Super Blackhawks).

Super Blackhawks have a trigger guard with a sharp angle forming a spur at its rear. The exact purpose of this angle is unknown, and it would appear that it is mostly aesthetic since the recoil of the gun tends to roll the barrel upward, making it doubtful that the angle was put there to protect the shooter's fingers. This

Super Blackhawks (like this one shown here) are easily distinguished from the Blackhawks by the spur at the rear at the rear of their trigger guards. (Courtesy of Sturm, Ruger & Company.)

sharp angle is not featured on the Hunter, though it is doubtful that others in this family will see this change since it has become a distinctive feature of the Super Blackhawks. (In addition to the trigger guard spur, Super Blackhawks are easily distinguished from the Blackhawk sister pistols by their nonfluted cylinders and longer grips.)



This Blackhawk, chambered for the .30 Carbine cartridge, comes close to being a hand cannon in its own right. Uncle Mike's oversized neoprene grip helps tame recoil and provides a place for the pinkie to rest.

For those wanting a similar gun for firing other cartridges, the Ruger Blackhawk models are nearly identical to the Super Blackhawk. The Blackhawks come chambered for .30 Carbine, .357 Magnum (which also accepts the .38 Special), .41 Magnum, or .45 Colt, making some of them "marginal" hand cannons (depending on how one divides things according to power). Ballistically, the .30 Carbine and .357 Magnum come close to being in the hand cannon ballpark.

Those adopting any of the Blackhawks for sporting use should consider the addition of Uncle Mike's neoprene grips, which not only soften recoil but also give the hand a better purchase thanks to their oversized

length that creates space for the pinkie to grip. These Custom Grade grips retail for $20.

A nearly identical Custom Grade neoprene grip is also sold by Uncle Mike's for the Super Blackhawks. In addition to giving the hand a bit more room to grip the firearm, the neoprene is excellent for reducing felt recoil. Retail price is $20.

The Ruger Single-Six .22s are also nearly identical to the Super Blackhawk and can fire either the .22 LR or .22 Magnum cartridge. Some guns come with interchangeable cylinders to accommodate both rounds.

The Ruger Vaquero. (Courtesy of Sturm, Ruger & Company.)

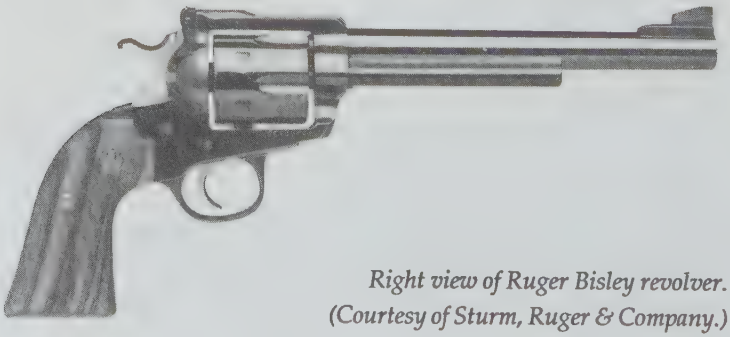
The Ruger Vaquero is very similar to the Blackhawk series but lacks adjustable sights, making it less than ideal for most hand cannon shooters. The Vaquero has a case-hardened blued finish that gives it an antique look. The revolver is normally seen chambered for .45 Colt, though according to Sturm, Ruger & Company literature a few were slated to be made in .44 Magnum. Whether any of these guns will actually be offered in this chambering is uncertain.

SPECIFICATIONS FOR RUGER SUPER BLACKHAWK

Model	Length	Weight (Unloaded)	Barrel Length	Capacity
S458N (blued)	10.5″	2.83 lbs.	4.63″	6
K458N (stainless)	10.5″	2.83 lbs.	4.63″	6
S45N (blued)	11.37″	2.87 lbs.	5.5″	6
KS45N (stainless)	11.37″	2.87 lbs.	5.5″	6
S47N (blued)	13.37″	3 lbs.	7.5″	6
KS47N (stainless)	13.37″	3 lbs.	7.5″	6
KS47NH Hunter (stainless)	13.37″	3.25 lbs.	7.5″	6
S411N (blued, bullbarrel)	16.37″	3.19 lbs.	10.5″	6
KS411N (stainless, bull barrel)	16.37″	3.19 lbs.	10.5″	6

RUGER BISLEY

While there was never a "Bisley" revolver as such, the original style of this pistol was developed during the British National Rifle Association matches held in Bisley, England, at the end of the 1800s (when British citizens were trusted with handguns and crimes was consequently low). Oddly enough, target shooters of a century ago preferred pistols having a steep-angle grip rather than the shallower grip of the pistols of that time



Right view of Ruger Bisley revolver. (Courtesy of Sturm, Ruger & Company.)

Left view of Bisley revolver.
(Courtesy of Sturm, Ruger & Company.)

(today's target shooters often prefer pistols having a more sloped grip rather than the steeper grip of today's semiautomatics—go figure).

At any rate, Sturm, Ruger & Company revived this design to create its Bisley model, which utilizes components from the Blackhawk/Super Blackhawk revolver action coupled with a frame with a steeper grip angle. This gives the gun more of a "semiauto pistol" point of aim, which some shooters prefer, and also offers a bit more purchase on the grip for those with larger hands (though the pinky still tends to hang below the grip).

When the Bisley is fired, most shooters find that the recoil causes more muzzle rise, but this isn't much of a problem with single actions, and many shooters find that such recoil kicks the gun into position for thumb-cocking the next shot. Rear sights on these guns are adjustable, and the chambers are generally unfluted.

The RB44W model of the Bisley is chambered for the .44 Magnum and, as such, makes it a choice worth considering by those needing a single-action hand cannon.

SPECIFICATIONS FOR RUGER BISLEY

Name	Length	Weight (Unloaded)	Barrel Length	Capacity
Bisley	13	3 lbs.	7.5	6

Stainless steel Redhawk with 4.5-inch barrel. (Courtesy of Sturm, Ruger & Company.)

RUGER REDHAWK

The double-action Redhawks are built around Ruger's first double-action series of revolvers: the Security Six, Police Six, and Speed Six. While the other revolvers in this series have since been replaced by the GP100 and SP101 series of guns, the Redhawk continues to be in the Sturm, Ruger & Company catalog, in part perhaps because it fills a niche that the company's

R models of the Redhawk have cuts in their barrels and rings, which make scope mounting simple. (Courtesy of Sturm, Ruger & Company.)

other guns don't. That said, the Super Redhawk is usurping some of the sales once enjoyed by the Redhawk. Nevertheless, many shooters prefer the Redhawk over its newer competitor for the simple reason that it is a more compact gun that can therefore be carried in a holster more easily.

Despite its "in the field" pluses, the Redhawk is designed with the silhouette shooter and hunter in mind. The R models come with integral scope mounts cut into the top rib of their barrels along with two 1-inch scope rings that make putting a scope on these guns a snap. The company also offers interchangeable front sights and replacement rear sights to give shooters an optimum sight picture.

Like other Ruger guns, the Redhawk is built to take all the punishment the .44 Magnum cartridge dishes out. The barrel has a large thread that increases the wall thickness where it enters the frame, and the frame itself has been beefed up around the cylinder to guarantee tight specs even after the gun has been fired extensively.

While the Redhawk doesn't boast the rubberized grip or heavy weight of the Super Redhawk, it is compact and for that reason appeals to many shooters wanting a lightweight hand cannon chambered in .44 Magnum.

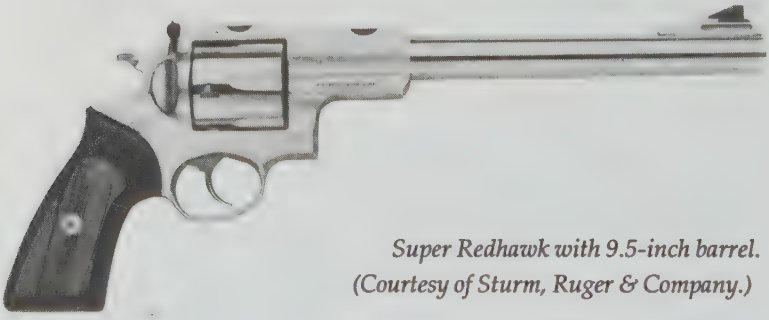
SPECIFICATIONS FOR RUGER REDHAWK

Name	Length	Weight (Unloaded)	Barrel Length	Capacity
RH-445 (blued)	11″	3.06 lbs.	5.5″	6
KRH-445 (stainless)	11″	3.06 lbs.	5.5″	6
RH-44 (blued)	13″	3.38 lbs.	7.5″	6
KRH-44 (stainless)	13″	3.38 lbs.	7.5″	6
RH-44R (rings, blued)	13″	3.38 lbs.	7.5″	6
KRH-44R (rings, stainless)	13″	3.38 lbs.	7.5″	6

RUGER SUPER REDHAWK

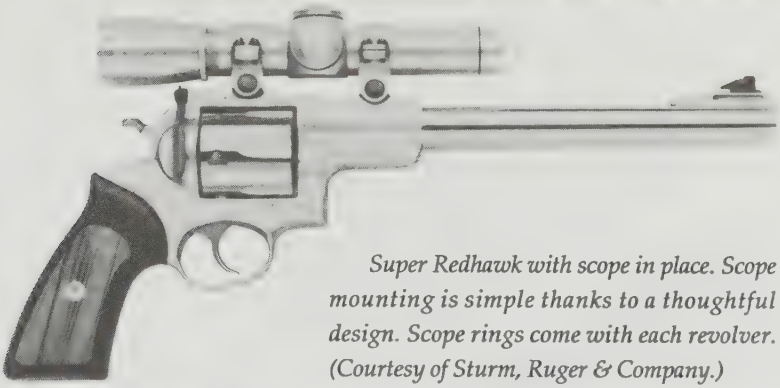
The Super Redhawk has many of the features found on the GP100 and SP101 revolvers, which are among the current "high-tech" buys in today's handgun market. Introduced in 1987, the Super Redhawk employs many of the best features of these guns, including their recoil-dampening neoprene grips with hard plastic or wooden inserts.

Super Redhawk with 7.5-inch barrel. (Courtesy of Sturm, Ruger & Company.)



Super Redhawk with 9.5-inch barrel. (Courtesy of Sturm, Ruger & Company.)

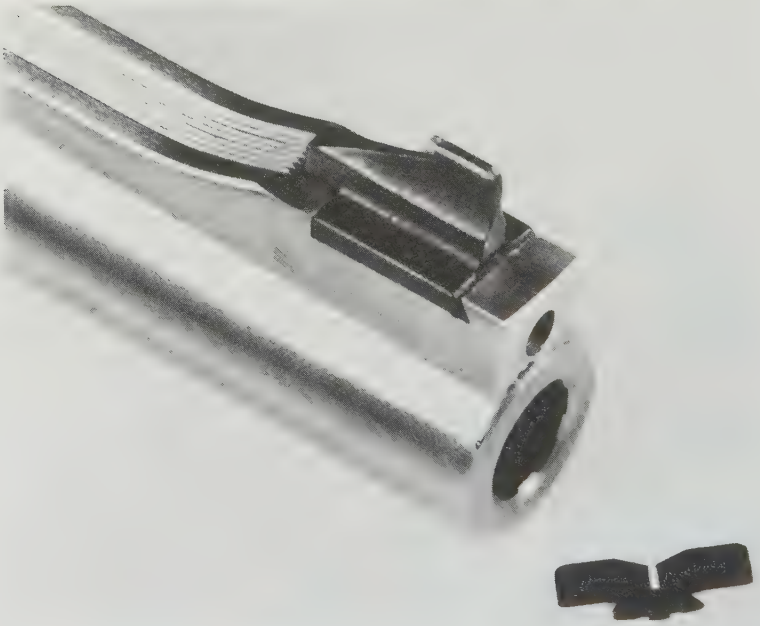
The Super Redhawk is chambered for .44 Magnum and has a thickened frame/barrel assembly ahead of the cylinder that adds strength to the revolver. This section also forms a very secure scope mount with ring bases molded right into the top of the frame. The Super Redhawk comes with either a 7.5- or 9.5-inch barrel, with the latter getting very respectable velocities from most .44 Magnum cartridges.



Super Redhawk with scope in place. Scope mounting is simple thanks to a thoughtful design. Scope rings come with each revolver. (Courtesy of Sturm, Ruger & Company.)

The front sights on Super Redhawks are easily replaced in this spring-loaded locking system. Shown here are the replacement sights offered by Ruger. (Courtesy of Sturm, Ruger & Company.)

The Super Redhawk has a massive design, which, when coupled with the inherent strength of the investment casting of many of its parts and a relatively low price tag, gives the shooter a gun that won't come apart even with the beating of firing large numbers of mag-



Ruger offers gold bead front sights for Super Redhawks as well as a replacement rear sight blade, both shown here. (Courtesy of Sturm, Ruger & Company.)

num loads through it. This makes the Super Redhawk first choice for many shooters desiring a .44 Magnum hand cannon.

SPECIFICATIONS FOR RUGER SUPER REDHAWK

Name	Length	Weight (Unloaded)	Barrel Length	Capacity
KSRH7 (stainless)	13″	3.31 lbs.	7.5″	6
KSRH9 (stainless)	15″	3.64 lbs.	9.5″	6

TAURUS MODEL 44

Forjas Taurus International opened its doors in 1938 but didn't start exporting its Brazilian-made revolvers

into the United States until the 1970s. At first these guns were considered copies of Smith & Wesson revolvers apparently engineered by Smith & Wesson, since both companies were owned by the same conglomerate, Bangor-Punta.

As time went on, Taurus gradually upgraded its revolvers, changing the overall layout and specs until they were more and more dissimilar to the Smith & Wesson handguns they were originally modeled after. In the end, the Taurus firearms have become very good buys, thanks in part to less expensive labor costs in South America.

For a long time, Taurus resisted the temptation to market a .44 Magnum revolver, in part perhaps because of the fear that such a gun might get quite a hammering with heavy use—a potential money loser given the company's lifetime guarantee of service. This changed in 1994, however, with the introduction of the Model 44 chambered in .44 Magnum.

These new double-action revolvers appear to be aimed specifically at the silhouette and hunting markets. Each Model 44 sports eight compensation ports, four on either side of the front sight. The gun has a floating firing pin with a transfer bar internal safety.

Barrel lengths include 4, 6.5, and 8.37 inches, with the 6.5- and 8.37-inch barrels being available with a full-lug and solid or ventilated rib. Finishes are either blued or stainless steel. The micrometer-style rear sights on the Model 44 are adjustable for windage and elevation, making them ideal for target work, while the front sight is serrated with a red plastic insert. Grips come only in a checkered Brazilian hardwood as of this writing, suggesting that shooters will be looking for either new grips or sanding off the checkering after firing these revolvers a bit.

SPECIFICATIONS FOR TAURUS MODEL 44

Model	Length	Weight (Unloaded)	Barrel Length	Capacity
Model 44	10″	2.79 lbs.	4″	6
Model 44	12.5″	3.28 lbs.	6.5″	6
Model 44	14.37″	3.57 lbs.	8.37″	6

WESSON REVOLVERS

It isn't any surprise that the late Dan Wesson, a descendant of the "Wesson" in Smith & Wesson, was the mastermind behind this double-action family of revolvers. This series of target wheelguns boasts easily removed barrels, permitting exchange of barrels of varying lengths within the same caliber. The Wesson design also enables easy removal of the grips.

Both these features make it possible for a shooter to place target grips on a gun when needed or replace them with compact "carry" grips if the revolver is to be used for self-defense, as well as change the barrel length of his gun. In effect, one Dan Wesson revolver and a couple of barrels and a spare grip can perform as several very different firearms according to the whims of the shooter.

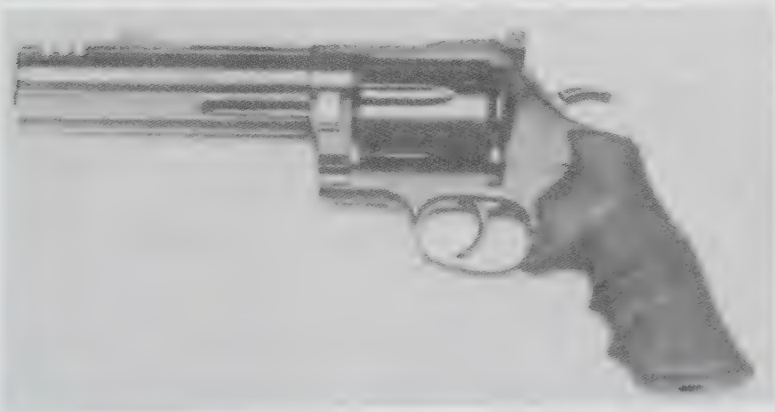
The exchange of barrels or grips is easy, though it isn't a really quick operation; it must be done with tools and requires the feeler gauge provided by the company to get the right spacing between the barrel's forcing cone and the front of the cylinder. But the modular system does allow a shooter to alter a gun to suit his varying needs, and the operation isn't beyond the capabilities of most people.

Wesson revolvers are available in .38 Special, .357 Magnum, .357 Maximum (known as the .357 SuperMag in company literature), .41 Magnum, .44 Magnum, and .445 SuperMag. Very similar .22 models are also offered, which are ideal for cheap practice. The Model 44V is chambered for .44 Magnum, the Model 40V for .357 Maximum, and the Model 445V for the .445 SuperMag.

Finishes include blued and stainless steel, with a choice of adjustable or fixed sights. Barrel lengths include 2.5, 4, 6, 8, and even 10 inches in the .41, .44, and .445 chamberings. (At one time the company offered a near-rifle-length 15-inch barrel for its .357 Magnum models, but this has been discontinued.)

In order for the revolvers to qualify for Production-class competition shooting, Wesson also offers Silhouette models of its .357 Maximum, .44 Magnum, and .445 SuperMag. Each of these revolvers has a heavy barrel shroud with compensation cuts in its top near the muzzle to help tame recoil. Inside, the shroud has an expansion chamber to help maintain gas pressure in order to reduce muzzle flip.

Since these shrouds are designed for a specific cartridge, they can't be interchanged between revolvers chambered for different rounds. Because of the hot gas exiting the compensation cuts, the front sight is located behind them, giving the silhouette guns an unconventional look. In addition to being useful in competition, many shooters will find that the added control this heavy shroud offers makes the Silhouette worthwhile in the field as well as in contests.



Alaskan Guide Wesson. (Courtesy of E. Arthur Brown Company.)

In 1993, 500 "special edition" versions of the .445 Silhouette revolver were manufactured. Dubbed the Alaskan Guide, this model is easily recognized by the black titanium nitrate finish applied to the stainless steel gun and the odd-sized 5.5-inch barrel. The Alaskan Guide was marketed by E. Arthur Brown Company in 1994 and carried a list price of $1,162.

In 1993, Wesson introduced a new FB (Fixed Barrel) model series to its product line. These revolvers have fixed rather than exchangeable barrels and boast very low price tags while maintaining the accuracy the company's original models have become famous for. The FB guns have very smooth, light trigger pulls, making them ideal for target shooting or varminting.

At the time of this writing, Wesson has added a .44 Magnum chambering to its lineup of FB models, but the maximum barrel length currently available is only 6 inches. However it seems likely that an 8- or even 10-inch barrel will eventually become available given the growing demand for hand cannons of various types.

Most Wesson revolvers have adjustable rear sights, and the colored insert in the front sight can be replaced for those preferring a different color. Wesson also sells replacement notch blades for its rear sight for those wanting to experiment with changing the sight picture. Cost runs around $9 for rear sight blades and $3 for color inserts.

Wesson has divided its barrels into several groups according to the style of the shroud and barrel. The V (Ventilated) guns have a small ventilated rib running down the top of the shroud, with the underlug only being long enough to protect the ejector rod. VH (Vent Heavy) guns have a full-length underlug beyond the ejector rod. CBA (Compensated Barrel Assembly) is the new integral recoil compensator shroud found on the Silhouette models.

Many silhouette shooters using these revolvers pre-

fer Wesson's "combat grip." This smooth walnut grip has finger grooves for a better hold and has proved so popular with this group of shooters that it is often referred to as the Silhouette Grip. At the other end of the scale is the company's checkered grips, which, though suitable for the lighter recoil of smaller cartridges, are punishing with the recoil of hand cannon rounds and therefore best avoided unless a shooter is planning on wearing gloves whenever shooting full-power loads.

To help reduce felt recoil, use of neoprene grips on these guns makes a lot of sense. Hogue offers excellent grips with finger grooves that are ideal on the Wesson revolvers, and Wesson even markets these as standard as well as replacement grips for its guns.

SPECIFICATIONS FOR WESSON REVOLVERS

Name	Length	Weight (Unloaded)	Barrel Length	Capacity
Wesson Model 44V	10"+	3 lbs.*	4, 6, 8, or 10"	6
Wesson 40 Silhouette	14.3"++	4 lbs.**	4, 6, 8, or 10"	6
Wesson 445 SuperMag	14.3"++	4 lbs.**	4, 6, 8, or 10"	6
Wesson Alaskan Guide	11.8"	3.5 lbs.	5.5"	6
Wesson FB Models	10"+	3 lbs.*	4 and 6"	6

+ Length with 4-inch barrel
++ Length with 8-inch barrel
* Weight with 4-inch barrel
** Weight with 8-inch barrel

Semiauto Hand Cannons

CHAPTER 4

THE SEMIAUTO ACTION, WHILE POPULAR IN SELF-DEFENSE guns, hasn't enjoyed the same success when it comes to pistols firing large hand cannon cartridges, despite the fact that this action tends to reduce felt recoil to a marked extent. One reason for this is that most modern pistols have a magazine well enclosed by their grip. This creates problems with the larger rounds generally found in these powerful handguns.

However, as the Desert Eagle, Grizzly, and Automag series of pistols have shown, a larger than normal grip length not only can accommodate medium-length shells, it can also be less awkward to hold than one might imagine. Nevertheless, this solution to the problem is limited in the type of cartridge that can be used, and those with smaller hands will find these guns a hefty handful.

Another route is to place the magazine outside the pistol grip. This permits shells to be as large as the designer wishes without creating human engineering problems. Just as many of the bolt-action hand cannons are based on "chopped" versions of rifles, the semiauto hand cannons are often based on chopped rifles, with

the AR-15 currently being the main design that's being adapted for these pistols.

How long this trend can continue remains to be seen. The misinformed in Washington, D.C., currently have legislation pending that creates "formulas" whereby pistols are declared favorable for criminal use according to various design features, including flash hiders, magazines outside the grip, and magazine capacity. Although actual studies show that guns having these features are used in less than 1 percent of all firearms crimes, these flamboyant firearms are favorites in the Hollywood action-adventure movies—where politicians apparently get most of their knowledge about firearms. Thus laws may be passed that will limit future production of semiauto hand cannons.

Another area of bureaucratic madness that limits the new semiautomatic hand cannons comes from the BATF. For years, antigun politicians have maintained that armor-piercing bullets are "cop killers." In fact, just as criminals avoid the use of high-tech semiauto hand cannons (as well as other types of hand cannons in general), they also avoid using specialized and more expensive ammunition. Thus a person can count on one hand the number of police officers killed by armor-piercing bullets purchased or stolen by a criminal.

The irony of this is that most armor-piercing pistol ammunition on the market was produced for the law-enforcement community. Thus the most common law-enforcement casualties from armor-piercing bullets occur when a criminal manages to get an officer's gun away from him (a tragedy that occurs in about a third of all shootings of police officers) or is due to friendly fire (as apparently took place with at least several of the agents shot during the BATF raid in Waco, Texas).

This prologue out of the way, in 1994, BATF decided that military-surplus 7.62x39mm cartridges with steel-core bullets should be banned because they were armor-

piercing pistol ammunition. At first blush, this may seem logical and no doubt is to those high up in the BATF bureaucracy. The catch is that almost *any* rifle ammunition will penetrate the ballistic vests worn by most policemen, whether the bullet is steel cored or not. Standard FMJ 7.62x39mm also will penetrate vests.

The kicker to this occurred not with the introduction of bolt-action and break-open hand cannons chambered for the 7.62x39mm—these had been around for some years when the announcement was made. Rather, the trigger had been the introduction of *semiauto* hand cannons that were to be chambered for this cartridge.

Already at least one semiauto hand cannon has fallen by the wayside because of such pressures. Robert Ford, president of Rocky Mountain Arms, recently announced that the AK-47-based pistol, the Comrade, would not go into production even though a functioning prototype had been on display at the 1994 SHOT show. Ford reported in the April 1994 issue of *Gun Tests* magazine that his company had been contacted by BATF and "... told to advise when the pistol was ready for shipment to the commercial market."

This was followed by angry calls to Rocky Mountain Arms from ammunition importers that BATF had contacted, telling them they couldn't sell their steel-core 7.62x39mm ammunition, even though BATF had earlier approved its importation and sale. Even though Rocky Mountain Arms was far along in negotiations with Norinco in China to purchase the parts to build the Comrade pistol in the United States, Ford made the decision to drop the introduction of the hand cannon.

Despite the fact that criminals seldom use armor-piercing bullets or guns firing them, bureaucratic whim is currently depriving American shooters of new firearms and, most likely, will continue to do so for some time unless U.S. shooters get their act together

and demand that crooked politicians worry about criminals rather than innocent firearms owners.

Whether we'll continue to see quality guns like the chopped AR-15 pistols already in production remains to be seen. In the meantime, there are a number of very fine semiauto hand cannons to choose from.

In theory, semiauto pistols are the most reliable action available for repeating arms. This is especially true of semiautos originally designed for military use. Things become a bit different with hand cannons, however, because many fire cartridges designed for revolvers or rifles or hand-loaded wildcats. Such cartridges often cause functioning problems because of powder charges outside the operational range of the firearm or, in the case of rimmed cartridges, because the brass was never designed to feed from a semiauto magazine.

For this reason it's essential for owners of these hand cannons to carefully test cartridges in any of these guns beforehand to be sure they'll work as promised when the heat is on in a contest or during the hunt. And anyone employing one of these firearms for self-defense should be especially careful to pick a firearm and cartridge that will function reliably, with the best potential for smooth feeding being with rimless cartridges.

It should be noted that pistols like the Grizzly and AMT Automag based on the 1911A1-style action have a few potential problems when it comes to accuracy. This comes about if the slide is not tightly connected to the barrel; any play between the slide, frame, and barrel creates accuracy problems as the sights shift from one shot to the next. If such a problem develops, it is aggravated with the mounting of a scope on the gun since the ring base is generally attached to the frame. Play between the frame and slide translates into errors between the scope and barrel.

To address this potential difficulty, most 1911-style guns designed for contest or target work come from the

factory with close tolerances on parts in order to minimize any "slop" between the slide and frame. But the downside to this is that minuscule amounts of dirt can create functioning problems. For this reason, these pistols must be kept immaculate and should be cleaned regularly for reliability. And obviously a shooter should never substitute a slide or barrel on these guns without first having the new part sized to fit the frame it'll be riding on.

In theory, guns with fixed barrels (like the Desert Eagle or AR-15-based pistols) have greater potential accuracy since there is less play between the sights and barrels on them. In practice, the 1911-style guns perform just as well as others provided they have quality barrels and a tightened slide with secure lockup of the barrel.

THE AMT AUTOMAG III, IV, AND V

In the 1960s, Harry Sanford came up with the idea of creating a semiauto pistol chambered for a very powerful cartridge in the .44 Magnum ballpark. Firearms designer Max Gera, working for Sanford, put together the final incarnation of the original idea, a powerful pistol that the men dubbed the Automag. Sanford Arms was created to market the pistol in the early 1970s.

The Automag offered a lot of power in a tight package. The design employed a rotating bolthead operated by recoil and proved to be a bit sensitive to fouling. Only the most dedicated shooters could keep the Automag in ammunition, however.

Chambered for a wildcat cartridge based on the .44 Auto Magnum used in revolvers, the auto pistol's .44 Auto Magnum cartridge was formed by cutting down .380 Winchester cases and reloading them. This was a laborious and exacting task, and undoubtedly more than a few would-be buyers of the gun avoided its purchase because of this. Nevertheless, the Automag had a small but loyal following.

But buyers weren't plenteous enough to keep the new company in the black. Soon Sanford Arms quit producing the pistol. A new company, the Automag Corporation, decided to purchase the rights to see if it could make a go of selling the gun. A year later this company also failed.

At this point, Thomas Oil Company formed a subsidiary, TDE Corporation, which purchased the rights to the gun. Harry Sanford became the chief engineer for the gun. This time the Automag was made in both .44 Auto Magnum as well as .357 Auto Magnum chamberings. In mid-1974, High Standard Corporation became the main distributor of the Automags, but actual production of the guns continued to be handled by TDE. Despite the power of these guns and their cultlike following, they eventually went out of production when High Standard discontinued its business.

As might be expected, a wide variety of Automags are seen since design changes were made by each new company manufacturing the gun. Gunsmith Lee Jurras also customized some of these guns by adding special grips and other modifications; these became known as the Lee Jurras Special models. Mag-na-ported barrels (with vent holes that reduce recoil) and interchangeable barrel conversion kits are also seen with these guns. Barrels most often are 6.5 or 8.5 inches long. The Automag was never noted for its reliability, in part due to the fact that its tightly fitted rotary bolt is sensitive to fouling.

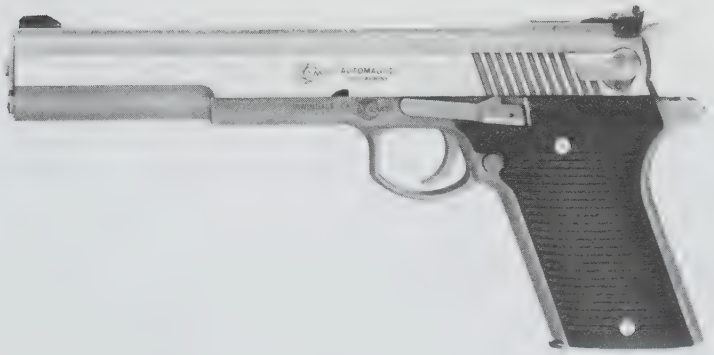
Harry Sanford was back at the drawing board with the folding of Standard Arms. Working with design engineer Larry Grossman, Stanford created a new, less expensive gun, the Automag II. This pistol worked with a gas-assisted action that proved more reliable than the original Automag's rotary bolt.

Although this gun was chambered for the comparatively diminutive .22 WMR (Winchester Magnum

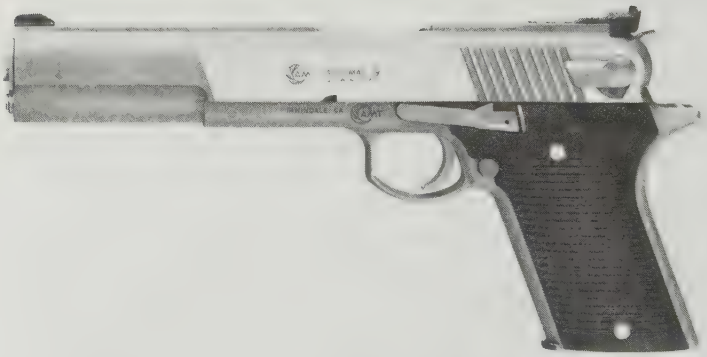
Rimfire), the cartridge still had the appealing "magnum" designation. Those who liked the idea of owning an Automag but couldn't afford the collector's prices commanded by the original guns were soon snatching the new version off dealers' shelves as fast as the guns were produced by AMT (Arcadia Machine & Tool, Inc.), the company created to manufacture them.

Soon Sanford and Grossman were coming out with even more powerful sisters for the Automag II. After trying to adapt its gas system to more powerful cartridges, the designers finally settled on the tried-and-true delayed recoil system pioneered by John Moses Browning, coupling his basic Hi-Power barrel-locking system with successful design features from other firearms as well as a few tricks of their own.

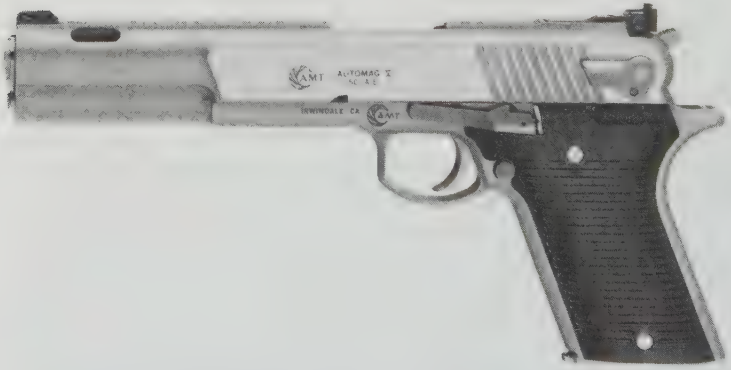
The results were the Automag III, Automag IV, and Automag V pistols. Outwardly, the guns have the overall look and feel of a 1911A1, with the only departure being a slide-mounted safety similar to that of the P-38 (although AMT's version of it does not drop the hammer). The magazine well of the Automag series has been lengthened to accommodate the longer cartridges it is chambered for, making it appear, as one rake



Automag III. (Photo courtesy of Arcadia Machine & Tool, Inc.)



Automag IV. (Photo courtesy of Arcadia Machine & Tool, Inc.)



Automag V. (Photo courtesy of Arcadia Machine & Tool, Inc.)

remarked, like a "1911 on steroids." Fortunately, the grip isn't too long for comfortable use except, perhaps, by those with very small hands.

Currently, the Automag III, IV, and V are chambered in hand cannon fodder. The Automag III is available in either the .30 Carbine or 9mm Winchester Magnum, the Automag IV in 10mm Magnum or .45 Winchester Magnum, and the Automag V in .50 Magnum. Except for the .30 Carbine and .50 Magnum (also known as the

.50 AE), all of these cartridges must currently be reloaded by the shooter. Ballistically, all these cartridges are in the range of the .44 Magnum in power, with the .30 Carbine being at the lowest end of the scale, while the .50 Magnum actually tops the .44 Magnum in performance. To help reduce the felt recoil generated by the .50 Magnum, the Automag V vents gas through oval ports on either side of the barrel and slide.

The .30 Carbine chambering, while not as powerful as the .357 Magnum with the shorter barrel of the Automag III (as compared to the longer barrel of the M1 Carbine), does pack a punch with ammunition topped with hollowpoint bullets. This pistol might therefore be of interest to those planning on purchasing several pistols with different chamberings or for those owning an M1 Carbine.

The Automag III, IV, and V have the standard Browning slide release and magazine release button and come with a fully adjustable rear sight. The stainless steel pistols are beautifully finished—side flats have a brushed finish, while the frame and portions of the slide are sandblasted to a dull gray. The long, black, carbon fiber grip plates have grooves that aid in retention yet don't cut into the hand during the somewhat harsh recoil of these firearms. The single-action trigger is ideal for target work. Due to the somewhat awkward placement of the manual safety on the slide, users may wish to carry an Automag with the safety off and the hammer down, thumb-cocking the pistol as it is drawn. Provided a little caution is observed and the the trigger finger is kept away from the trigger until firing, this is a relatively safe practice.

The .22 Magnum Automag II has a 9-round magazine and makes a useful purchase for owners of one of the larger guns who want a similar practice or small game pistol. Choice of barrel lengths with the Automag II includes 3.37, 4.5, and 6 inches. Weight is 20 ounces less

than that of the larger pistols, so those wanting an identical "feel" may wish to add weights to the Automag II.

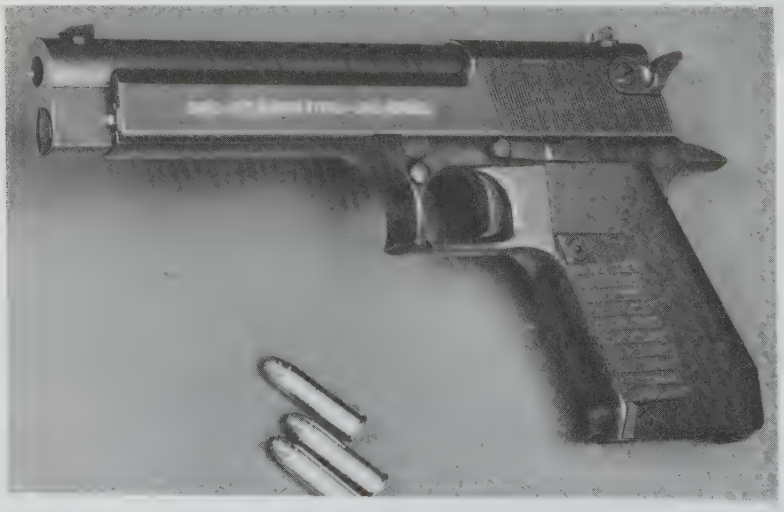
SPECIFICATIONS FOR THE AMT AUTOMAG III, IV, AND V

Model	Length	Weight (Unloaded)	Barrel Length	Capacity
AMT Automag III	10.5"	2.68 lbs.	6.37"	8
AMT Automag IV	6.5 or 8.62"*	2.87 lbs.	10.5 or 12.62"*	6
AMT Automag V	6.5	2.87 lbs.	10.5	5

*10mm Magnum only

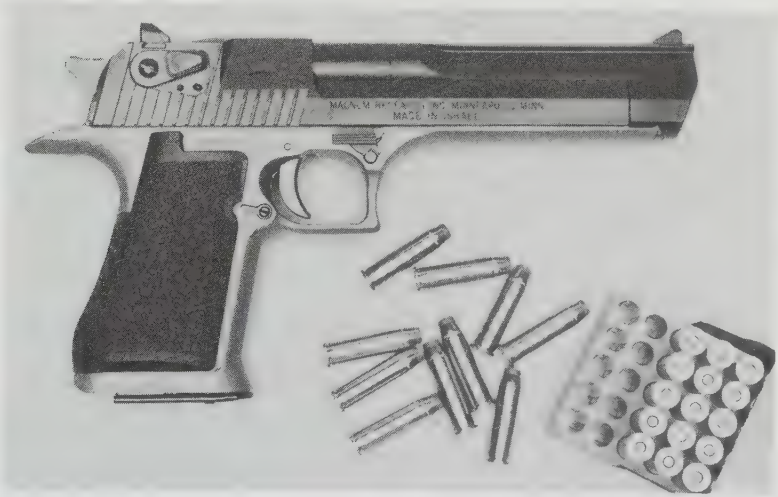
DESERT EAGLE

Conceived in the United States, the Desert Eagle was developed in Israel by IMI (Israel Military Industries) in the early 1980s. The first Desert Eagles were manufac-



Early prototype Desert Eagle. Note "backward" slide safety lever, grip design, and magazine release on the base of the grip. (Photo courtesy of Magnum Research.)

tured in Israel and started appearing on gun dealers' shelves in the United States around 1985. Following a problem in meeting demand for the pistols in 1992 (and



Production model of the early Desert Eagle. (Photo courtesy of Magnum Research.)

Current production model of the Desert Eagle, readily recognized by the extension on the manual safety. (Photo courtesy of Magnum Research.)

probably fearful of the prospect of government import limitations), Magnum Research started assembling parts of the gun in the U.S. and currently is working toward full assembly and possibly manufacture of the guns stateside—depending on the antigun climate in Washington, D.C.

Given the fact that IMI is best known for the Uzi series of submachine guns and the Galil rifles, it isn't surprising that the Desert Eagle departs radically from many other semiauto pistol designs, though the exterior belies this. The basic layout is like that of most other modern semiauto pistols: the magazine release is on the side of the grip, the slide release is on the left side of the frame, and there is a thumb-activated slide safety.

Internally, things are different. The pistol is gas-operated with a system that is more like a rifle than the delayed blowback systems used with most other semiauto handguns. The gas system employs a fixed, shrouded barrel which stays in position on the frame during firing, with gas coming up a port just ahead of the chamber to operate a three-lug rotating bolt that rides in the slide assembly. The fixed barrel gives the gun a lot of potential accuracy, a potential realized with most of these pistols when fired with quality ammunition.

The bolt also uses a piston-style ejector similar to that of a military rifle. Coupled with the large extractor claw, this makes the extraction process very dependable. Dual recoil springs in the frame work with the Desert Eagle's weight and gas system to reduce recoil to a manageable push.

While the large Desert Eagle has enjoyed a lot of coverage in TV and Hollywood action-adventure films (appearing in the hero's hands in *The Equalizer* TV show and with Arnold Schwarzenegger in several of his films, including *Red Heat* and the *Last Action Hero*), it is actually more of a sporting gun than combat weapon due to its large size and weight. (A fighter

opting to carry that much will generally elect to pack something like a high-capacity AR-15 carbine rather than a pistol.) Nevertheless, the Desert Eagle could most certainly be pressed into service as a double-duty self-defense/hunting firearm. And its magazine capacity and rapid semiauto action give it an edge over most of the other firearms in this book.

On the downside, being a semiauto, the Desert Eagle is not capable of cycling with the very light loads sometimes used in practice by those firing bolt-action or revolver hand cannons. However, since most contest shooting and hunting is done with full-power ammunition, this isn't much of a consideration for the majority of shooters. But as with other semiautos, shooters must always test their ammunition carefully, especially with handloads; otherwise malfunctions may occur at an inopportune moment in the middle of a contest or during the hunt. And of course anyone using one of these pistols for self-defense must employ the most reliable of commercial ammunition.

The single-action trigger is generally pretty good right out of the box, with trigger pulls falling into the 6- to 8-pound range. Most recent Desert Eagles have adjustable triggers, but it's generally best to leave such adjustments to a gunsmith unless you really know what you're doing and really need a different pull.

The mounting of the safety on the slide of the Desert Eagle was undoubtedly dictated by the fact that there was little if any room for it on the frame since the slide rides low on the pistol. From a design standpoint, the slide-mounted safety is very practical since it blocks the firing pin, making an accidental discharge with the safety engaged mechanically impossible (barring a broken part or defective ammunition). On the other hand, the safety is tough to engage without either repositioning the shooting hand or using the offhand (the latter being the route most shooters seem to adopt). It can be

argued that since this gun is hardly a hideout pistol and will almost always be fired with a two-handed grip, easy manipulation of the safety with one hand isn't of prime concern with a handgun this large.

Efforts have been made to overcome this minor shortcoming. IMI engineers have modified the shape of the safety lever to make it easier to manipulate. Prototypes of the gun had a rearward lever; production guns had a forward-facing lever. The newest models have a lever with an extended "foot" that's even easier to operate. Although the newest design still doesn't completely do away with the awkwardness of the slide-mounted safety, it does make the situation more manageable. For those wanting to upgrade an older Desert Eagle with a new-style safety lever, a replacement kit can be purchased from Magnum Research. (The actual design changes in the Desert Eagle since its introduction have dictated model changes. Early guns were called Mark Is, while current production pistols are referred to in company literature as Mark VIIs.)

The slide release on the Desert Eagle is also often too much for easy one-handed operation. Most shooters discover that two thumbs are needed to release the slide or that it's easy to retract the slide after placing a loaded magazine into the grip to release it.

A few gunsmiths have experimented with modifications of the slide release and safety to make them easier to manipulate. The most notable of these is produced by Behlert Precision; this company's replacement safety for the Desert Eagle is larger and more easily engaged by the thumb, while the replacement slide release extends rearward over the top back edge of the left grip plate, giving the operator better leverage. Those wanting one-handed control of the Desert Eagle should contact Behlert Precision for more information about replacement parts.

Behlert Precision also offers a single-chamber com-

pensator for the Desert Eagle. This assembly is welded to the front of the barrel and directs some of the gas from the cartridge upward as the bullet leaves the barrel, countering some of the tendency of the muzzle to flip upward as well as reducing felt recoil somewhat. This modification is expensive, but the quality of the workmanship is superb, and the barrel assembly is refinished and the compensator styled to make the work appear to be part of the original gun.

Like some other large handguns, the Desert Eagle briefly made the transition from hand cannon to carbine. Prototypes of the Desert Eagle carbine were created in the early 1990s for possible deployment by police units. The carbine sported a 14-inch barrel, had a stock attached to its grip, and had a handguard attached under the barrel. Magnum Research discovered that the red tape involved in selling such a firearm in the United States was too great to make it a viable commodity and soon discontinued any plans to produce the weapon. While it's always possible that a "civilian" version of the carbine with a 16-inch barrel might be sold in the future, this seems doubtful at this time.

For those wanting to employ the Desert Eagle both as a sporting arm and a combat pistol, it's possible to purchase an adapter kit to convert it to .357 Magnum (or, conversely, convert one from .357 to another chambering such as .41 Magnum or .44 Magnum). Since the .357 Magnum cartridge is currently the most effective handgun cartridge available for close combat, it is first choice for such use, though almost any of the cartridges this gun is chambered for will be very effective with expanding bullets.

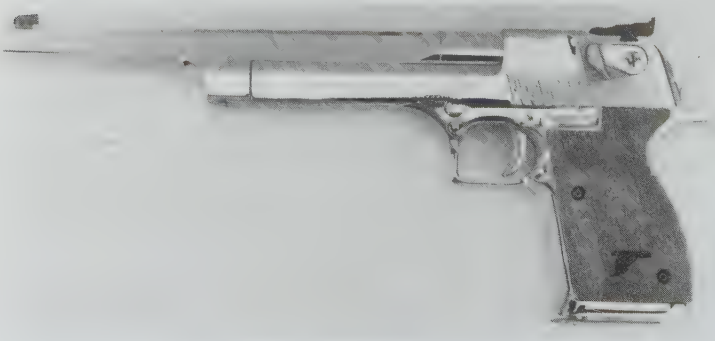
Magnum Research created the .41 AE (Action Express) for conversion of 9mm pistols to a more potent round in practical shooting contests. In addition to the many 9mm semiauto pistols converted to accept this cartridge, a few Desert Eagles chambered for this round were sold.

The .41 AE uses a rebated head the size of a 9mm Luger cartridge, while the mouth of the cartridge is large enough to accommodate a .41-caliber bullet. This facilitates transformation of 9mm guns to .41 caliber by simply substituting a new barrel and recoil spring. The system does reduce reliability slightly since the cartridge creates occasional feeding problems due to its reduced girth at the head, where it is normally shoved out of the magazine by the recoiling slide assembly. But a properly adjusted pistol will be fairly reliable with the .41 AE.

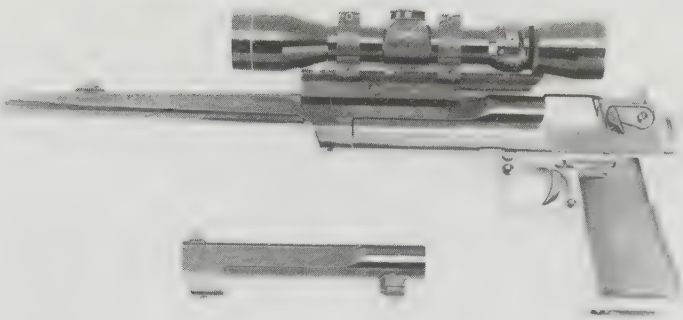
Unfortunately for Magnum Research, the .41 AE was overshadowed by the introduction of the 10mm Auto and the even more popular .40 S&W, both cartridges being in the power range of the .41 AE and feeding more reliably due to larger caseheads. The .41 AE fell by the wayside.

Magnum Research revived the idea of using a rebated cartridge head in the early 1990s. This time the case rim was rebated to 0.514 inch, the same dimensions as the .44 Magnum rim. This made it practical to create a cartridge with a .50-caliber bullet without necessitating the production of a new slide assemble or bolt.

The .50 AE (also known as the .50 Magnum) is cur-



Long-barreled versions of the Desert Eagle make ideal hand cannons. This gun sports the company's hard chrome finish. (Photo courtesy of Magnum Research.)



Conversion kits make it possible to transform a standard Desert Eagle into this "hand cannon deluxe" configuration in just moments. (Photo courtesy of Magnum Research.)

Conversion kits with slides, magazines, recoil springs, and barrels make it possible to change a Desert Eagle from one chambering to another in just minutes. (Photo courtesy of Magnum Research.)

Desert Eagle in its .50 AE incarnation. Note scope ring base milled into the top of this pistol's barrel. (Photo courtesy of Magnum Research.)

rently available from CCI and IMI, with the latter's ammunition being imported into the United States by Magnum Research under the Samson Ultra trademark. The bullets with this cartridge are generally around 300 grains and have a muzzle velocity of around 1,380 fps (with a 6-inch barrel). This gives the bullet 1,260-plus fpe, placing the cartridge well above the .44 Magnum in terms of power.

Although the hammering of the shooter by a cartridge like the .50 Magnum can be awesome, the weight and gas operation of the Desert Eagle does a good job of reducing this kick, making it considerably less than might be experienced with a revolver chambered for the .44 Magnum. Muzzle blast and flash from the .50 Magnum is also extreme; for this reason it is best employed with a longer barrel whenever this is an option.

The Desert Eagle is currently available in .357 Mag-

num, .41 Magnum, .44 Magnum, and .50 AE. In addition to conversion kits which permit owners to change back and forth between calibers, 14-inch barrel assemblies can be mounted on these pistols. Many contest shooters find that this feature gives them both added velocity as well as greater potential accuracy with iron sights due to the longer sight radius.

The Desert Eagle is sold with a choice of fixed or adjustable rear sights. The models in .357 Magnum, .41 Magnum, and .44 Magnum can accept no-gunsmithing scope mounts that bolt to the top of the barrels. The .50 Magnum guns have contoured barrels with integral scope mounts grooved into the tops.

There are currently three barrel lengths in all chamberings available for the Desert Eagle: 6, 10, and 14 inches long. Earlier models were available with 8-inch barrels, but this length has since been discontinued. At the time of this writing, barrels with Mag-na-porting compensation vents are also available to reduce recoil to even more manageable amounts.

There are seemingly endless finishes to choose from, including stainless steel, blued steel, high-polish blue, satin nickel, bright nickel, brushed chrome, matte hard chrome, and polished hard chrome. The standard neoprene grips help minimize recoil. Steel and aluminum alloy frames are available for most of these guns. Steel soaks up recoil better and is slightly more durable, while the alloy frame offers a lighter weight for those carrying the gun in the field.

Magnum Research carries a wide variety of accessories and parts for the Desert Eagle, including holsters, laser sights, dot scopes, and replacement grips (such as the excellent Hogue rubber grips, which make an excellent addition to these guns). The company also offers replacement spring kits, tritium night sights, and adjustable trigger kits.

When the various grips, barrel lengths, finishes, and chamberings available for the Desert Eagle are taken into

consideration, there are about 5,000 possible configurations of this pistol right from the factory, without any modifications by a gunsmith or owner other than exchanging a barrel assembly, sights, or grip panels. While this makes these guns a collector's nightmare, they are ideal for those wanting a "custom" pistol without the high price tag such one-of-a-kind guns normally carry.

SPECIFICATIONS FOR DESERT EAGLE PISTOLS

Model	Length	Weight (Unloaded)	Barrel Length	Capacity
Desert Eagle (alloy frame)	10.25"	3.25 lbs.	6"	9 (.357), 8 (.41 and .44), 7 (.50)
Desert Eagle (blued steel frame)	10.25"	3.87 lbs.	6"	9 (.357), 8 (.41 and .44), 7 (.50)
Desert Eagle (stainless steel frame)	10.25"	4.18 lbs.	6"	9 (.357), 8 (.41 and .44), 7 (.50)

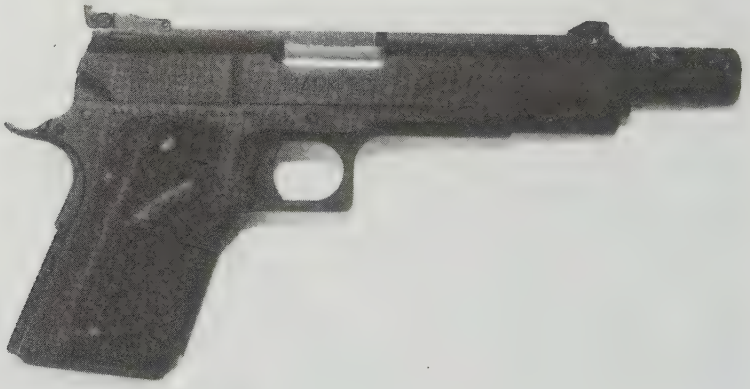
A few of the many variants of the Grizzly 1911-based pistols. (Photo courtesy of LAR Manufacturing.)

More or less 1911-sized Grizzly Mark I (top rear) behind two more massive Grizzlys chambered for .44 Magnum. The center gun has an extended barrel, while the lower, front pistol wears the company's muzzle brake. (Photo courtesy of LAR Manufacturing.)

GRIZZLY

Organized in 1968, LAR Manufacturing first generated most of its income through the manufacturing of machine gun tripods and M16 receivers for the U.S. military. In an effort to cut into the lucrative civilian market, L.A.R. introduced the Grizzly line of pistols in 1983.

The Grizzly builds on design features of the Colt 1911. The most noticeable departure is an extended grip/magazine well that has been enlarged to accommodate longer cartridges. Barrels of these guns usually extend beyond the slide. Sometimes the bare barrel is left exposed, or an optional muzzle brake/com-



Grizzly Mark IV. (Photo courtesy of LAR Manufacturing.)

Grizzly Mark V, chambered for the .50 AE. (Photo courtesy of LAR Manufacturing.)

pensator is fit onto the slide bushing, covering the extended barrel. Overall, the Grizzly design minimizes manufacturing expenses by using as many 1911 parts as possible, with only 10 parts actually differing in size from those of the 1911.

In addition to the chambering a Grizzly is sold in, conversion kits for changing the pistol to other chamberings are offered by LAR. These kits include .45 ACP, .45 Winchester Magnum, .357 Magnum, 10mm Auto, and the .357/.45 Winchester Magnum. A conversion kit consists of a barrel, recoil spring, ejector, extractor, and magazine and carries a retail price of around $215.

The newest addition to the Grizzly line is the Grizzly 50, also called the Mark V in company literature. Regardless of its name, the pistol is chambered for the .50 Magnum (AE) cartridge. The .45 Magnum version is the Mark I, while the .44 Magnum chambering is found with the Mark IV model.

Most models come with adjustable rear sights, beveled magazine wells, Pachmayr grips, polished feed ramps, throated barrels, adjustable triggers, and ambidextrous thumb safeties. The Mark I models lack some of these features but carry a lower price tag.

The LAR Cutts-style barrel compensator is available as an accessory for all the Grizzly guns, though it comes standard on many. The compensator replaces the standard barrel bushing in the 1911-style design. This makes it easy to exchange the bushing with the compensator by simply commencing field-stripping of the pistol. The downside to this design is that the compensator has no expansion chambers since the barrel has to extend through the compensator during the reloading cycle after the gun is fired. But it still works, albeit not as efficiently as compensators with expansion chambers that ride on the front of an extended barrel rather than on the slide.

The Grizzly design features a solid barrel bushing and has an extended magazine release to help out those with small hands. Rails, slide, and other parts seeing a lot of wear are greatly thickened, making them both stronger as well as heavier—a plus in soaking up recoil. Takedown is identical to that of the Colt 1911A1 and, if the pistol ever needs to be repaired, any gunsmith who's familiar with the Colt 1911A1 will be able to work on the Grizzly without problem.

In addition to compensators, conversion kits, and other accessories, LAR Manufacturing offers holsters and magazine pouches. These are constructed of basket-weave pattern leather. Both belt and shoulder holsters are available along with matching leather magazine pouches.

SPECIFICATIONS FOR GRIZZLY PISTOLS

Model	Length	Weight (Unloaded)	Barrel Length	Capacity
Mark I	10.5"	3.18 lbs.	5.4 or 6.5"	7 (.357 Magnum, .357/.45, 10mm, .45 WM, .45 ACP
Win Mag	13.1"	3.5 lbs.	8 or 10"	7 (.357 Magnum, .357/.45, 10mm, .45 WM, .45 ACP
Mark IV	10.5"	3.18 lbs.	5.4 or 6.5"	7 (.44 Magnum)
Mark V	10.62"	3.5 lbs.	5.4 or 6.5"	6 (.50 Magnum)

MASTER BLASTER

In addition to the manually operated AR-15 Master

Blaster pistols mentioned in Chapter 1, Allan Zitta also offers custom-made AR-15 pistols. Nearly identical to the Master Blaster manual pistols, the semiautos have free-floated barrels inside custom handguards. The gas tube is surrounded by a recoil spring assembly that brings the bolt forward and chambers a new cartridge after each shot is fired.

Zitta's guns vary somewhat in appearance from one to the next since they often have handmade wooden pistol grips, machined handguards, and other one of a kind features. Cost of the semiauto Zitta hand cannons run in the neighborhood of $2,000 depending on the features of the firearm. Trigger tuning and other special work costs extra.

SPECIFICATIONS FOR SEMIAUTO MASTER BLASTER

Model	Length	Weight (Unloaded)	Barrel Length	Capacity
Master Blaster	23"*	4.5 lbs.+	varies	20 or 30

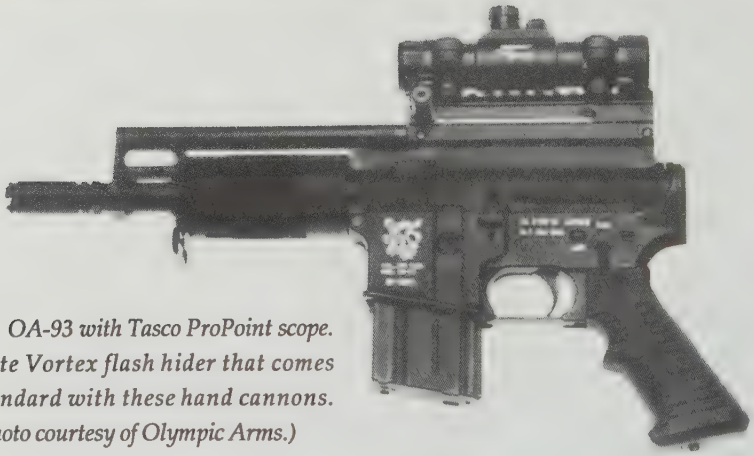
* Length with 14-inch barrel

+ Approximate weight with 14-inch barrel

OA-93

Introduced in 1993, the OA-93 is a "chopped" version of the SGW/Olympic Arms' AR-15-style rifle. The gun originally came with a 6-inch barrel; since its introduction, 9- and 14-inch-barreled versions have been added for greater potential velocity. Chamberings listed in the company's catalog have included both the .223 Remington and 7.62x39mm cartridge. At the time of this writing, company officials suggest that the 7.62x39mm version may not be made due to pressures on the ammunition industry by BATF.

The OA-93 has been designed with a gas system and recoil spring that allows complete omission of the



OA-93 with Tasco ProPoint scope. Note Vortex flash hider that comes standard with these hand cannons. (Photo courtesy of Olympic Arms.)

buffer tube assembly normally used with AR-15-style rifles. This creates a very short pistol while still permitting a large number of the original rifle's parts to be used in the OA-93. Several key parts in the receiver have been modified, however, to avoid the possibility of a shooter creating an illegal weapon by accidentally swapping the upper or lower receiver of the OA-93 with those from an AR-15.

The barrel on the OA-93 is free floated inside the handguard. It has a modified gas system and a side-mounted charging handle rather than the traditional charging handle found at the top rear of the AR-15. In order to keep muzzle flash down, a Vortex flash hider is mounted on the muzzle of these guns. The end of this pronged flash hider is grooved to permit a thin wire to be wrapped around it. This helps keep the prongs from getting snagged in brush for those using the gun for hunting.

The OA-93 is marketed without iron sights. Instead, a scope mount block is located above the recoil spring assembly atop the receiver, making mounting a scope on the firearm a simple proposition. SGW offers scope mounts and Tasco ProPoint scopes as accessories for this pistol.

SPECIFICATIONS FOR OA-93

Model	Length	Weight (Unloaded)	Barrel Length	Capacity
OA-93 (.223)	15.75" *	4.2 lbs.	6, 9, or 14"	20 or 30
OA-93 (7.62x39mm)	15.75" *	4.2 lbs.	6, 9, or 14"	5 or 10 +

* Length with 6-inch barrel

+ 7.62x39mm capacity with 20- and 30-round .223 magazines; this pistol has not gone into production at the time of this writing.

PATRIOT

Even though the Comrade pistol never went into production due to government red tape, Rocky Mountain Arms did put its Patriot into production in 1994 after displaying models of it at gun shows for several years and getting many potential buyers' mouths to watering. The Patriot is based on the AR-15 rifle and is nearly identical to the XM231S (see below). The principal difference is that the Patriot lacks a carrying handle and front sight post, instead having a scope mount block (which accepts standard Weaver rings) attached to its upper receiver, giving it a very sleek appearance. Rocky Mountain Arms offers the pistol in a choice of Teflon-S finishes in black or NATO green.

The Patriot's barrel is threaded to accept standard AR-15 flash hiders and muzzle brakes. The buffer tube extends rearward from the back of the receiver, presenting a bit of a problem during recoil, though this isn't much of a concern given the low recoil of this hand cannon. Nevertheless, shooters should keep a firm grasp with this pistol to prevent having the buffer tube strike their face when the firearm is discharged (and the same caution should be observed with the XM231S below).

The barrel is free-floated inside a tubular handguard attached to the front of the receiver. Barrel twist is 1 turn per 9 inches, permitting good accuracy with virtually any .223 Remington bullet weight. The Patriot also comes with a locking black nylon case and cleaning kit.

Like the other AR-15 spin-offs listed in this chapter, this hand cannon will accept any AR-15 magazine, from the 5-round Colt magazines through the 20-, 30-, 40-, and 45-round box magazines, on up through the 90- and 120-round drum magazines made for the rifle. Of course, the more magazine capacity added, the heavier the pistol becomes. This can be a plus for cutting down recoil but makes the pistol anchorlike in the field.

SPECIFICATIONS FOR THE PATRIOT

Model	Length	Weight (Unloaded)	Barrel Length	Capacity
Patriot	20.5″	5 lbs.	7″	20 or 30

XM231S

Gun Smoke Enterprises' XM231S is based on the U.S. Army's M203 port-firing gun, which, in turn, is a chopped version of the U.S. M16 (AR-15) rifle. The principal difference is that Gun Smoke Enterprises' rendition of the gun is a semiauto pistol rather than a short-barreled automatic weapon.

Author's XM231S built using Gun Smoke Enterprises' conversion kit. The gun shown here sports a RamLine Laser pistol grip as well as an Aimpoint laser below the barrel. DPMS's conventional-looking flash hider also doubles as an effective muzzle brake.

Like its parent guns, the XM231S fires the .223 Remington cartridge and has a very short buffer tube, modeled after the design first created by Tom Provost (and outlined in my book *Making Your AR-15 into a Legal Pistol*, available from Paladin Press, though the Gun Smoke design is much refined over the original patterns). Gun Smoke Enterprises does an excellent job of finishing and fitting parts, making the complete XM231S a good buy.

These hand cannons are available with a choice of 10- or 11.5-inch barrels (a shorter barrel is slated for production down the road). The buffer tube on the XM231S has a sling swivel stud on it, a nice touch that permits easy attachment of a sling for carrying the pistol in the field.

In addition to assembled pistols, Gun Smoke Enterprises sells a kit that can be used to build a legal pistol *provided* the other parts used in building the gun are also new (otherwise the builder will run into trouble with federal laws). Gun Smoke also offers a complete kit of new pistol parts, including the receiver halves for do-it-yourselfers wanting to assemble such a pistol on their own.

SPECIFICATIONS FOR THE XM231S

Model	Length	Weight (Unloaded)	Barrel Length	Capacity
XM231S	23″	5 lbs.	10 or 11.5″	20 or 30

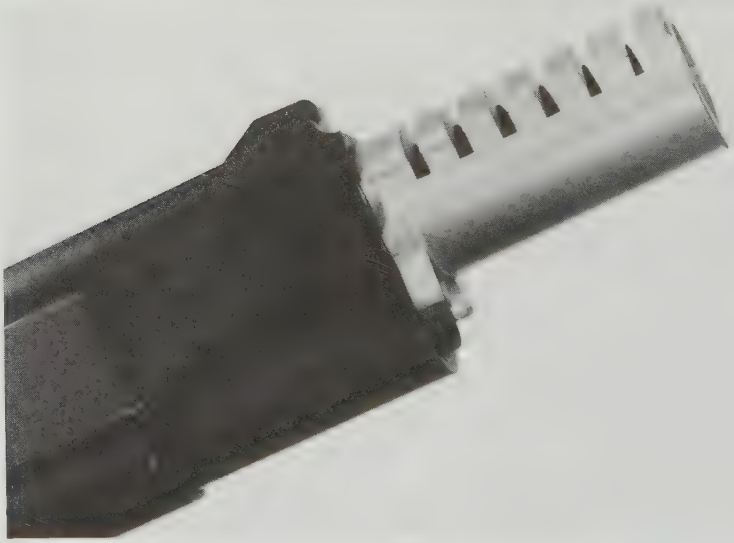
Of Recoil and Muzzle Blast

CHAPTER 5

GIVEN THE POWER OF THE CARTRIDGES FIRED IN HAND cannons, the obvious downside to these guns is their recoil and muzzle blast—though arguably this is also their appeal for many shooters. Regardless of how well a shooter handles recoil, firing these bucking pistols for extended periods without developing a flinch or hand-numbing aches and pains can be a trick.

Of course the *amount* of recoil varies greatly from one gun to the next within the hand cannon family. This is especially true when comparing various cartridges used in these guns. For example, a .223 Remington cartridge fired from a 4-pound pistol will create recoil of around 5.5 to 7.6 foot pounds. Firing a .308 Winchester cartridge in the same type of handgun will give a whopping kick of somewhere between 23 to 30 foot pounds.

Cartridges more powerful than the .308 Winchester can really rattle your teeth. Fortunately, guns in these chamberings normally have muzzle brakes of one sort or another to lessen recoil (and if you have a pistol chambered for such a round, be sure to get some such recoil-reduction device *before* firing it unless you're into pain).



Cutts-style compensator/muzzle brake found on many Grizzly pistols. (Photo courtesy of LAR Manufacturing.)

Muzzle brakes, ports drilled in the muzzle end of the barrel, and other compensators and recoil-reduction devices all function by redirecting hot gas through ports and vents. This change of direction translates not only into reduced recoil but also into increased noise directed toward the shooter. With very powerful cartridges, a blast blowing at the shooter's face may also be noticed. So muzzle brakes and "jet" holes in the barrel are at best trade-offs which the shooter should be aware of.

Shooters searching for a muzzle attachment for their hand cannon will find themselves facing a lot of odd terms. "Flash suppressors," also known as "flash hiders," reduce the flame created by unburnt gases leaving the barrel. "Muzzle brakes" direct gas from the bore rearward before the bullet has cleared the front of the brake, pushing the gun forward somewhat on these jets of gas and counteracting recoil forces. A third type of device is the "compensator," which directs gas

upward and, sometimes, to the left or right to counter the tendency of the barrel to flip upward and to the side during recoil.

In practice, almost any muzzle device will effect some reduction of flash and recoil and, if it ports gas upward, will act as a compensator. Consequently, there isn't any one device that is "only" a compensator or flash hider.

To be legal in the United States (without going through a lot of red tape), all muzzle devices must not reduce the muzzle noise of the pistol; doing so makes the device a silencer from a legal standpoint (though with cartridges firing supersonic bullets, the muzzle racket is anything but silent). Silencers, even though they aren't commonly used by criminals, are prone to all types of horrid laws since Hollywood has convinced our legislators that a silencer will turn an otherwise normal person into a raging psychopath.

Unfortunately, some of the current crop of firearms-ignorant legislators in Washington, D.C., have decided that a threaded barrel in itself is a dangerous thing since this could permit mounting a silencer on a gun. These misguided souls seem intent on penalizing owners of guns having threaded barrels, even though a silencer can be mounted on an unthreaded barrel just as easily. For this reason, threaded muzzle brakes, compensators, and the like may soon be replaced by counterparts that mount onto the barrel without the help of threads.

In addition to doing their assigned tasks of redirecting gas and reducing flash, muzzle attachments can also help protect the crown of a barrel. This can be an important feature since damage to the crown quickly damages the accuracy of a gun. While most owners of hand cannons are very careful with their pistols, those hunting in rough terrain might appreciate the extra protection a muzzle attachment offers to their gun. (As noted earlier, welding a muzzle brake on a barrel can

lengthen it to conform to legal requirements—such as transforming a T/C Contender with a 14-inch barrel to a rifle with a 16-inch barrel.)

Except for protecting the muzzle or lengthening the barrel beyond legal minimums, flash suppressors may at first glance appear almost worthless on hand cannons, though they are seen on AR-15-based pistols like the OA-93 and XM231S. While some shooters may be tempted to have a gunsmith cut off the flash hider on these guns, this is a mistake because flash hiders not only cut down on the flash of unburned powder, they also stabilize the bullet somewhat, making the accuracy of most of these pistols better with the device in place.

There are even more efficient devices for reducing recoil and group size for these two pistols, however. True muzzle brakes designed for the AR-15 rifle perform well on AR-15 pistols, reducing their felt recoil and muzzle flip. The best of these are the Mil/Brake and Muzzle Stabilizer, both now manufactured by L.L. Baston Company (and formerly made by DTA). These actually give a reduction of up to 40 percent in recoil and reduce muzzle flip as well, thanks to tiny porting holes along the top of the device. The Mil/Brake is about an inch shorter than the Muzzle Stabilizer, which has a bird-cage-style flash hider added to its front to reduce muzzle flash. Cost for the Mil/Brake is approximately $40; the Muzzle Stabilizer costs about $35.

DPMS markets an excellent muzzle brake for AR-15-style pistols. This brake looks like a standard flash hider, but closer inspection shows that the unit has a ring added to its front. This traps gas behind the exiting bullet, exerting a forward push to the barrel that drags the gun forward and reduces recoil.

Yet another recoil-reduction device that can be used on AR-15 hand cannons is the Clark/Miculek muzzle brake sold by L.L. Baston. This does nothing to reduce flash; instead, it has a single-purpose design that gives

maximum reduction of recoil and muzzle rise. The unit is modeled after a cannon muzzle brake and is quite effective. Cost is $45.

Choate Machine & Tool's flash suppressor for the Contender's 14-inch bull barrel is modeled after the effective AR-15/M16 bird-cage design and is good at reducing flash. Since the lower slots have been omitted on the Choate unit, it also gives a compensating effect, reducing muzzle rise as well as rising dust during prone shooting. Choate's flash hider is machined from solid bar steel and hot-acid vat blued. Obviously this flash suppressor should be welded onto the barrel so it won't "fly" downrange. Cost is $23.

The "cleanest" in appearance of the recoil-reduction and compensation devices are those that consist of ports cut into the barrel of a hand cannon. However, these do not protect the crown of the barrel, and the work must be done on a custom basis rather than being a bolt-on gadget. But for shooters who fire only at the range and who are concerned about the appearance of their firearm, this may be a good option. Many of the manufacturers of the pistols listed in this book offer porting for their barrels, especially those marketing single-shot bolt-action, break-open, and falling-block hand cannons.

Mag-na-port is the best-known of the businesses doing porting work (and handles the work for most of the companies offering ported barrels). This company's ports are cut with EDM (Electrical Discharge Machining), which leaves a very clean hole without any chance of the rough "chatter" marks that can be left behind by machining. The company also calculates very precise positions for the ports to achieve maximum recoil and muzzle-flip reduction.

Prices for this work vary according to the firearm, chambering, and barrel thickness. The best bet is to call the company and ask how much the work will cost for a specific firearm. Revolver porting generally runs

around $63; semiauto porting through the slide and barrel, $90; and porting through a break-open, bolt-action, or falling-block action barrel around $85. Bull barrels will generally up the price by about $7.

In addition to porting the barrels, Mag-na-port has created several "models" of firearms featuring its porting. Currently these include the Stalker built around either the Ruger Super Blackhawk, Ruger Super Redhawk, Smith & Wesson Model 629, or Freedom Arms .454 Casull. In addition to Mag-na-porting, these custom guns have sling swivels added to their barrels and grip base along with other extras that one would expect on a custom pistol.

Mag-na-port's Predator conversions are carried out on the Ruger Super Blackhawk. Barrels are shortened to 4.62 inches, the barrel crowned, and ports added. Then new sights are placed on the pistol and the surface, hammer, trigger, ejector rod, and center pin are polished and honed. Finally, "Mag-na-port Custom" is etched onto the pistol.

There are other ways to reduce recoil. In theory, slight reductions in recoil are achieved with shorter barrels. This method is usually counterproductive, however, because the bullet's velocity drops off as the barrel is shortened while muzzle noise and flash are increased by powder that burns upon exiting the muzzle. Too, a longer barrel puts weight forward of the grip, helping reduce a hand cannon's muzzle flip as well as recoil. Cutting down the length of the barrel also reduces the firearm's weight, increasing potential recoil in the process and negating some of the recoil reduction due to less burning powder in the barrel.

Another way that felt recoil can be increased or decreased is by increasing or decreasing the weight of the hand cannon. In general, the heavier a gun, the more mass it has and the more force is needed to overcome its tendency to stay in place. Firing a lightweight

handgun can be punishing, while firing the same round in a heavy pistol may be a pleasant experience.

There are a number of ways to add weight to a pistol. The most efficient in terms of accuracy is to use a heavier barrel. In addition to reducing recoil due to weight, a heavy barrel will tend to flex and vibrate less as the bullet travels down it, creating greater potential accuracy, all other things remaining equal. And with more weight in the barrel, muzzle flip will also decrease slightly, as noted earlier. When it's all said and done, placing extra weight in the barrel area can reap a lot of benefits.

However, replacing barrels on a gun can be an expensive proposition, especially with target barrels. Consequently, shooters have added weight to barrels in other ways. Among the more successful devices are barrel shrouds of various types, muzzle attachments (like the flash hiders and muzzle brakes mentioned above), and weights placed in the stock below the barrel or attached to the barrel itself. Provided these are done skillfully, the end result can be both pleasing to the eye and effective in reducing muzzle flip and recoil.

There are other effective ways of adding weight to a hand cannon. One is to drill out various areas inside the stock and add lead weights. Accessories can also act as weights—a consideration when purchasing such gear. Optical scopes, lasers, bipods, flash hiders, and the like all add recoil-reducing weight to a pistol. While normally a shooter with a holster pistol will search for the lightest of accessories in order to keep the firearm from feeling like an anchor on his belt, hand cannon shooters may wish to go at things from the opposite end, choosing larger scopes and heavier models of accessories in order to increase the total weight of the gun and reduce its recoil in the process. (This option may, of course, be closed to those shooting in contests that limit the weight or accessories that can be used with a pistol.)

Since the shooter's hands and arms recoil with the pistol during its initial rearward travel upon firing, adding weight to hands or wrists will help tame recoil. There have been products created to do this for hand cannon shooters; unfortunately, demand for these accessories is very small. Consequently, most have only been available for a short time, and new versions on these basic ideas are likely to meet the same fate. However, it's possible to improvise these devices once the basic idea is understood.

Wrist bands containing lead or mercury have appeared from time to time. Mercury, which is both heavy and liquid at temperatures most hand cannon owners shoot in, tends to recoil a tad more slowly than a firearm. Thus it lags behind the initial recoil impulse, spreading it out somewhat so it becomes more of a shove rather than a sudden blow. Mercury is also very poisonous and can contaminate an area if it leaks out of its container. For this reason, recoil-reduction devices containing mercury should be approached with caution.

A second variation on this theme is a wrist weight secured to the arm by a leather band. This can also be effective and lends itself to improvisation a bit better.

Several systems have appeared that place lead shot in small bags within the fabric of a shooting glove, usually around the back of the hand and possibly along the backs of the fingers. (These are very similar to the old police "sap" gloves that have lead shot encased in them, enabling a cop to give a person a pounding with just a slap of the hand. Modern police sap gloves could be adapted to this purpose, though the purchaser should check to be sure they aren't illegal in the jurisdiction in which they'll be used.)

Another good way to reduce felt recoil is to increase the "flex" in the pistol grip. Although a person might think that a wooden grip would feel the same as a rubberized grip, in fact the latter can make the recoil of a

pistol seem considerably less because the rubber flexes slightly during recoil, spreading the rearward travel out so it is more of a push and less of a jab.

Although wooden grips don't flex very much, they can slide in the hand, often creating a little slack and apparent recoil reduction. For this reason, checkering should never be added to any wooden grip on a hand cannon. Instead, the wood should be smooth so it can slip along the skin without biting into its surface.

When the hand cannon is being purchased, it's often best to purchase grips directly from the firearms manufacturer. This translates into a savings up front (replacement grips can be expensive) and has the added plus that most manufacturers will try to place the grip that does the best job of reducing recoil on its firearm. Thompson/Center Arms, Ruger, and others all have excellent grips designed specifically for their firearms.

With hand cannons needing replacement grips, several aftermarket companies come to the rescue. Pachmayr, Hogue, Michaels of Oregon, and others offer excellent rubberized or neoprene grips for most of the revolver-action hand cannons as well for the Dominator and Springfield 1911A2 SASS (both of which use the 1911-sized grip plates).

Hogue offers rubber grips for the Smith & Wesson Model 29/629 series, the Dan Wesson .44 Magnum guns, and the Colt Anaconda as well as an oversized grip with finger grooves for the Ruger Super Blackhawk. For those who dislike the Ruger GP-100/Super Redhawk grips, Hogue also carries a full-sized rubber grip with finger grooves. These all retail at $20.95 each.

Pachmayr has a whole line of grips designed specifically to reduce felt recoil with hand cannons. Among its offering are models for the Colt Anaconda, Smith & Wesson 29/629, Ruger Redhawk, and Wesson 44V as well the Thompson/Center Contender. Retail price is $32.50 each.

Uncle Mike's oversized rubber grips for the Ruger Super Blackhawk are especially ideal for these revolvers. The retail price for one of these runs $20.

Of course, a little padding added to the surface of your skin can work wonders in reducing the pain of recoil, too. Many shooters find that a leather glove is just the ticket for erasing pain and skin chafing during extended shooting bouts. Often shooters cut out the fingertips of the gloves, giving them a punk-rock look that permits sensitive trigger work while still putting cushioning on the palms and webs of the hand.

For a classier look, professional shooting gloves are even better. E. Arthur Brown Company offers light Cabretta leather gloves that give a skin-tight fit for easy manipulation of the controls on the hand cannon. A thick double layer of leather creates a pad on the palm. The first finger on each hand of the gloves is left exposed for picking up objects as well as sensitive trigger work. Cost is $13 per glove, with a pair selling for $23.

Another important factor that will help a shooter avoid developing physical problems (like tingling fingers, "stone-bruised" bones in the hand, cut web, arthritis, tennis elbow, and the like) is to limit the amount of firing that's done with full-power cartridges that produce a lot of recoil. Firing just a few such cartridges and being careful to aim and develop consistent follow-through with shots can be much more productive than hour-long sessions that become a physical ordeal. (If you do overdo it on occasion, Ben-Gay salve, aspirin, ibuprofen, or other medical concoctions may help you get over the hump. But if you consistently overdo it with a heavily recoiling hand cannon, the physical damage will eventually take its toll and you'll discover you can no longer engage in your sport.)

Although most people assume that flinches develop because of the recoil of a firearm, this usually isn't the case. More often, flinching is caused by the noise itself.

That means shooting without proper ear protection can quickly turn a steady hand into a jerking appendage that sends bullets downrange in a willy-nilly fashion.

To prevent this happenstance, ear plugs are a must, ideally complemented with earmuffs. Both can be purchased at most gunshops for very little and cost considerably less than the hearing aid that will be needed if ear protection isn't used while practicing with a hand cannon.

For those into high-tech gadgets, there's a noise-activated earmuff that has tiny amplifiers that relay sound outside the muffs to speakers over each ear. When the amplifiers encounter the discharge of a firearm, they shut down momentarily, transforming the headset into regular earmuff protectors. These sophisticated devices aren't as expensive as you might expect. E. Arthur Brown Company, for example, offers the Ultra 9000 electric muffs for just $50.

Hot gases leaving a hand cannon can do a lot of damage. Even if your handgun doesn't have a muzzle brake that sends a hot blast toward your face with each shot, it's still wise to wear some sort of eye protection. No, you don't normally need such protection, and more than a few shooters fire guns without safety glasses. But what would be a major accident without shooting glasses is often a minor one when a shooter has the good sense to wear them. Having shrapnel from a burst brass case bounce off your shooting glasses is much more pleasant than lying in an emergency room while a doctor picks metal out of your blind eyes.

While tempered glass offers a lot of protection, the best material for shooting glasses is polycarbonate. This plastic is not only strong but tends to flex and deform rather than shatter. Polycarbonate shooting glasses can and have made some amazing "stops," capturing shotgun pellets and brass fragments that would normally put out an eye in nothing flat.

Polycarbonate glasses are available from a variety of

sources, including most gunshops as well as many hardware stores. Wrap-around designs offer more protection than do regular-style glasses. Costs of shooting glasses range from $15 for utilitarian safety goggles on up, with "designer" sunglasses like Gargoyles running from $49 to $99. Whatever you settle on, be sure that the glasses also block ultraviolet rays so they give protection from sunlight as well as flying debris.

In addition to the blast from the muzzle, revolvers also spit a bit of fire from the gap between the barrel and the front of the cylinder. Normally this isn't a problem. But for silhouette shooters or others who adopt the on-the-back stance that puts a revolver alongside a bent leg, the hot gases jumping the gap can burn both clothing and skin.

The solution is some type of shield that can be strapped or draped over the leg against which the revolver is being rested. Do-it-yourselfers might improvise a shield from steel plate or other material, but Kevlar fabric is ideal for this purpose since it's nearly impervious to the heat of the gas and also offers a bit of protection should a cartridge rupture (though in such a case a thin Kevlar shield isn't guaranteed to prevent all injuries).

For those looking for a commercially made shield, E. Arthur Brown Company currently sells a Kevlar revolver blast shield for $60. The device comes complete with split double-D rings and a harness that make it easy to strap the shield on and get it adjusted properly.

Reloading can also enable a shooter to reduce the recoil produced by his hand cannon as well as create loads that achieve peak accuracy in his firearm. Recoil reduction is done through reduced loads or, to a lesser extent, by using lighter bullets.

Downloading a cartridge must be approached just as carefully as producing hot loads. While it's obvious that a hot load can become dangerous due to the high pressures it produces, many reloaders don't realize that

light powder loads can also blow up a handgun. The exact mechanism that causes this is unknown, but it has happened on a regular basis for some years now as shooters try to produce "squib" loads that end up ruining their firearms in a fiery blast.

That said, there's still a lot of leeway for those interested in downloading cartridges. The best way to create these low-power loads is to check reloading manuals, adopting the data that comes closest to producing the velocity and energy the shooter desires. With many cartridges it's also practical to create loads with lead bullets; this can produce very low-velocity, light-power loads which may be suitable for hunting small game that standard loads would turn into vapor.

Most smokeless powder manufacturers put out their own reloading manuals. Provided you don't mind sticking to one company's powder, this is not a bad way to find handloads for your cartridges. (Reloaders shouldn't try to substitute one manufacturer's powder for another's, even if the product numbers are identical.)

For those who don't want to limit themselves to just one manufacturer's powder, several manuals are available to give a wider choice. Some are marketed by bullet manufacturers, with Speer's *Reloading Manual* being the best example. (These, of course, give the shooter a choice of powders but limit him to that company's bullets. However it's possible to make more substitutions *provided* the bullet style, weight, jackets, and other features stay the same and loads don't approach the recommended maximums.)

A better alternative is to use manuals that have garnered the data from a number of manufacturers. These permit a shooter to study the figures and select powder and components that will give him the exact power and velocity he wants. About the only caution here is that the buyer should be sure manuals are authorized compilations of reloading data; a few "typos" could create a dan-

gerous situation. (Shooters should also note the barrel lengths used in test guns. A gun having a 14-inch barrel might have velocities much lower than a 20-inch test barrel used by a powder manufacturer, for example.)

E. Arthur Brown and other companies sell these manuals, with each booklet devoted to one chambering. Cost of the manuals is $7 each, and most of the popular pistol and rifle cartridges are covered, including .44 Magnum, .22 Hornet, .222 Remington, .223 Remington, .22-250 Remington, .243 Winchester, 6mm Remington, .25-06 Remington, .270 Winchester, .280 Remington, 7mm Remington Magnum, .30 Carbine, .30-30, .308 Winchester, and others. E. Arthur Brown Company also carries two specialty manuals, one (for $17) devoted to XP-100 chamberings and the other (for $17) covering BF cartridges. (We'll take a closer look at reloading equipment for hand cannon ammunition in the next chapter.)

Like race cars or bobsleds, hand cannons can be punishing, even dangerous contraptions if you don't approach their use with common sense and caution. But also like racing machines, once you get the hang of handling them, they can be a thrill to operate and a real joy to own.

Accuracy

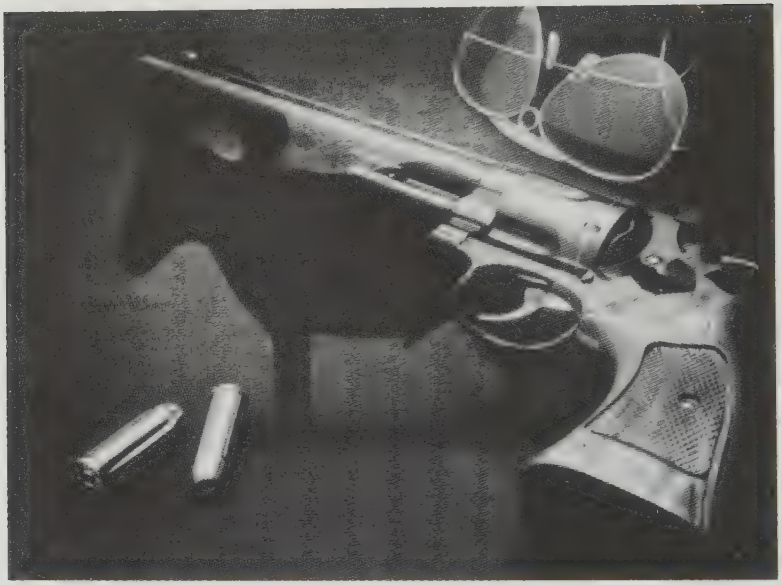
CHAPTER 6

MANY HAND CANNONS ARE CAPABLE OF ONE MOA (minute of angle) groups. This translates to 1-inch groups or less at 100 yards. And some of the pistols listed in the previous chapters are capable of even smaller groups in the hands of a skilled shooter with quality ammunition.

The greatest potential accuracy of any hand cannon will be determined by the quality of its barrel. It's better to skimp on scopes, sights, grips, or accessories if it enables you to put your money into purchasing a gun with a quality barrel. There are a number of fine barrel makers these days, with Douglas and Wilson having well-established reputations, though they aren't the only companies offering precise barrels by any means.

IRON SIGHTS

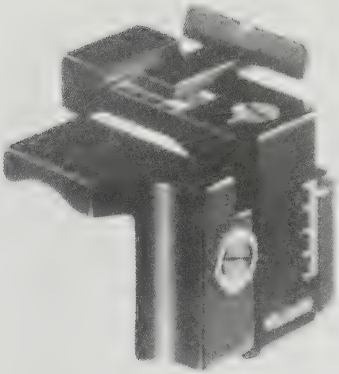
Scopes and laser sights (which we'll get into later) aren't for all hand cannon shooters. Many prefer the toughness of iron sights (with *no* batteries to replace or glass to fog or get scratched). And contest shooters often have no choice but to use iron sights on their firearms since rules require this. In such cases, quality



A quality gun, like this S&W Model 29, some shooting glasses, and earplugs along with high-performance ammunition like these cartridges from Federal Cartridge are about all a shooter needs to get started in the sport of silhouette shooting. (Photo courtesy of Federal Cartridge Company.)

iron sights can make the difference between very accurate shots and so-so performance. The NRA Unlimited Freestyle category in pistol silhouette shooting contests, for example, requires an iron sight on a hand cannon (though the unlimited standing event does allow a scope). So many hand cannon users will have to depend on iron sights to get bullets onto the target, although a few may want to use both a detachable scope and iron sights on their firearms.

You should experiment to see which type of iron sight is best for you. Many shooters find that hooded front, and sometimes hooded rear, sights are ideal, especially in areas where the sunlight becomes intense. Very fine grooves or a matte finish on the front sight and top of the



The FP rear sight from Williams has micrometer adjustments that are accurate and "tight" enough to securely hold the firearm's zero. (Photo courtesy of Williams Gun Sight Company.)

barrel can also be of help. A matte finish effect can be improvised by using a sooty flame and running the barrel and sights through it (though care has to be exercised). Generally, blued/black sights are best, while nickel or stainless steel sights give the worst sight pictures (which is why most manufacturers put blued sights on otherwise all stainless steel hand cannons).

Most champion shooters get good results after experimenting with various thicknesses of front sight blades and various styles of rear sights. Fortunately, manufacturers have become very accommodating with sight styles and choices. Those firing popular hand cannons, especially single-shot guns, should have little trouble finding sights to suit their individual whims.

Of course having the sights zeroed on target is essential. It's also important to remember that the zero may change with a switch from one ammunition to another, when glasses are on or off the shooter's face, when a stock or grip is modified, or even when a shooter is simply wearing new gloves or adopting a new hold on the stock. Obviously, you must zero a hand cannon carefully before entering a contest or commencing a hunt.

As might be expected, the best place to start the search for iron sights is with the manufacturer. If you can purchase adjustable sights from such a source, it's

almost always your best bet, especially if you can buy a hand cannon with the sights already installed by the manufacturer.

For those wanting to add quality adjustable rear sights to a hand cannon, Williams Gun Sights company is the place to check first. The Williams' FP (Fool Proof) series is available for the Thompson/Center Contender, BF Pistol, and Remington XP-100 series. Cost is around $50.

The Williams' micrometer adjustment system stays zeroed during the heavy recoil of a hand cannon but still permits easy and precise adjustment of both windage and elevation, with clicks being fine enough for good accuracy. Target knob models are also available for easy adjustment of the sight in the field. Weighing only 1.5 ounces, the FP sights cost $59 for target sight models and $50 for the standard model.

E. Arthur Brown Company has a very compact RPM rear sight for the XP-100, Thompson/Center Contender, and BF Pistol. The sight has click adjustments of 0.5 minutes and a square notch 0.100-inch wide, making precision shooting practical. Adjustments are made with a small screwdriver rather than knobs so the zero can't be accidentally knocked out of place in the field. Cost is $65.

SPECIAL EYEWEAR

Although some contest rules forbid optics on pistols, they may not ban optics on the shooter's face. In such a case, shooters may wish to wear special glasses or lens attached to shooting glasses that bring the front and rear sights into clear focus (rather than having just one or the other in clear focus). Some optical eyewear is even capable of bringing the sights and target into focus at the same time, improving the chances of precise shot placement for the shooter.

Light coming through a small opening will become more sharply focused, albeit with loss of brightness.

The Merit Attachment for eye glasses and shooting glasses is one such device that produces this effect. It has an adjustable iris assembly that attaches to the shooter's glasses via a suction cup. The shooter can then open or close the size of the aperture through which he's viewing the sights and target until all three are in sharp focus. If the shooting is being done in the sunlight, this system works very well for most shooters with normal eyesight. The Merit Attachment is available from the E. Arthur Brown Company for $47.

SCOPES

A scope adds bulk and, unless a lot of practice is put in with it, doesn't increase the speed at which a target can be acquired. Scopes are also complex and prone to problems like fogging or being damaged when dropped. Dings that don't bother an iron sight will destroy a scope. So thought needs to be given before simply mounting a scope onto a hand cannon, especially one that will see hunting trips through rugged country.

Most manufacturers of the guns listed in this book offer scope mounts for their firearms, and a few even have their own line of scopes. Generally, these are the best bet for scopes and scope mounts since the manufacturer will take pains to get a quality scope at a reasonable price to bring out the best potential for its products. Those choosing a T/C Contender, Ruger Super Black Hawk, or Magnum Research Desert Eagle firearm will be best served to use the scope mount system devised by these companies.

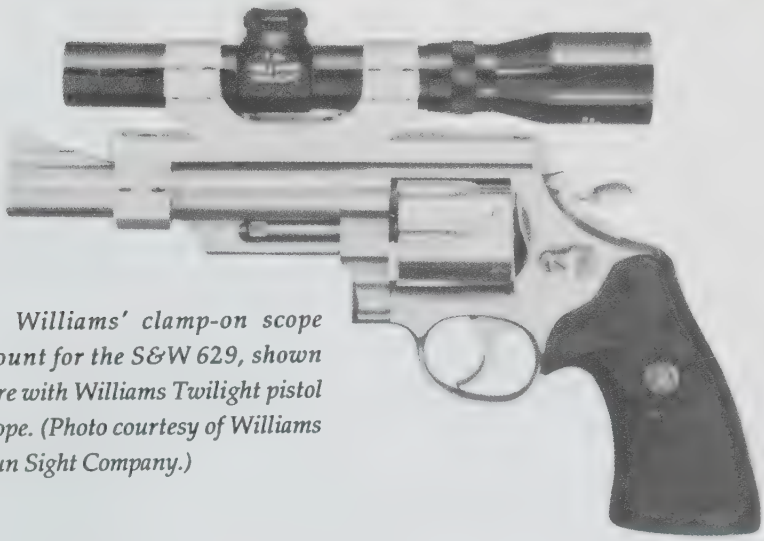
For those hand cannons that don't have scope mounts available from the manufacturers, B-Square is a good place to start a search for mounts. This company has mounts for many popular firearms, including the Ruger Super Blackhawk and Redhawk; Dan Wesson revolvers; Smith & Wesson Models 29, 629, etc.; and Thompson/Center Contender. The company's AR-15

rifle mounts are ideal for the XM231S. Cost of these mounts runs in the $40 to $70 range depending on the type of mount and its finish (stainless and black finishes are available).

B-Square mount for the Ruger single actions makes mounting a scope on one of these revolvers a snap. (Photo courtesy of B-Square.)

B-Square scope mount for the Ruger Redhawk. (Photo courtesy of B-Square.)

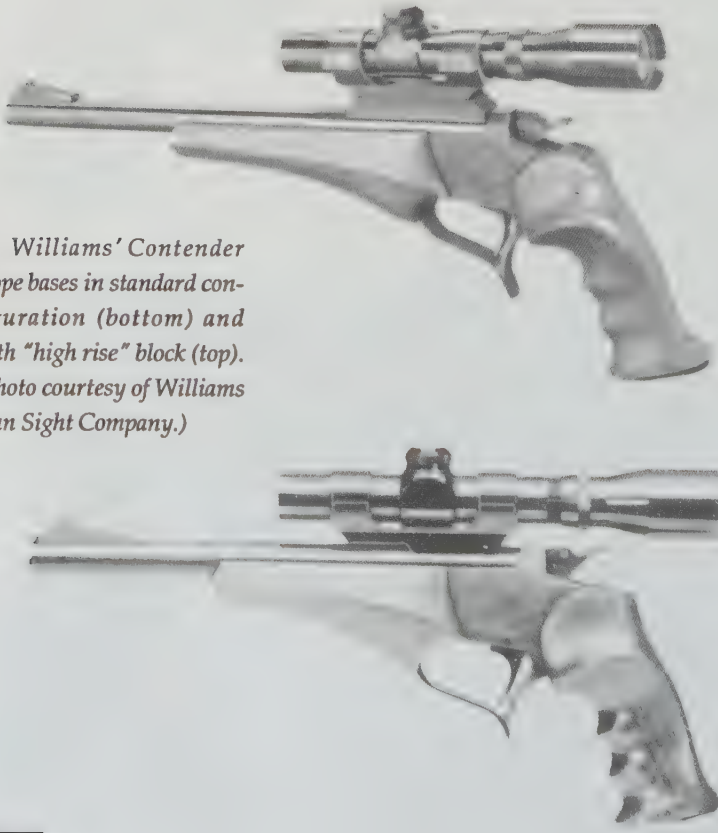
This Colt Anaconda features the beautifully styled B-Square scope mount system. Like most other mounts from B-Square, this one requires no gunsmithing and also permits the iron sights to be used with the mount in place, thanks to a tunnel over the sights. (Photo courtesy of B-Square.)



Williams' clamp-on scope mount for the S&W 629, shown here with Williams Twilight pistol scope. (Photo courtesy of Williams Gun Sight Company.)

The base on the B-Square mounts accepts standard Weaver rings, and the company offers 1-inch rings with a finish to match its mounts as an option. The big plus of the B-Square mounts is their "no-gunsmithing" design. It is easy to attach a scope to a pistol with these mounts without having to make any modifications to the firearm.

Williams Gun Sight Company also offers scope mounts for the Ruger Super Blackhawk (including the Bisley models) and the Smith & Wesson 29/629 guns. These clamp onto the barrel and therefore must be matched to the barrel length. Finishes include both black and stainless steel. The Williams scope mounts are designed to accept 1-inch scopes.



Williams' Contender scope bases in standard configuration (bottom) and with "high rise" block (top). (Photo courtesy of Williams Gun Sight Company.)

Also available from Williams Gun Sight Company are the Streamline scope mounts designed for the Thompson/Center Contender. These have rings attached directly to the mounting block for very solid attachment of the scope to the rings. A sub-base is also available to raise the scope above the barrel, permitting more clearance for easier manipulation of the hammer even with large-objective scopes. Finishes include black and stainless.

E. Arthur Brown Company offers scope rings that fit the ventilated barrel rib on Wesson revolvers. First a protective pad is placed on the rib, then the ring is placed on the rib over the pad and tightened into place with Allen screws. Both two- and three-ring kits are available. The three-ring kits are best with heavy-recoiling guns since they provide a more secure lockup of the scope so it can't shoot loose. Blued, three-ring kits cost $40 while nickel-finished three-ring kits run $50.

One of the more bizarre scope mount systems to be seen in recent years is the Taco Hold mount. Looking like the carrying handle on an AR-15, this mount places the scope well above the receiver of hand cannons like the Thompson/Center Contender and BF Pistol, permitting the firearm to be held in a lower position, which some shooters find steadier. In the past, Taco Hold scope mounts had to be custom made; currently, E. Arthur Brown Company carries its own version of this "high rise" mount for both the BF Pistol and Thompson/Center Contender. The mount accepts standard 1-inch Weaver-style rings and costs around $40.

Scope manufacturers also offer mounts for the more popular hand cannons. The big plus of purchasing these is that the scope and mount will have matching finishes (albeit, more aesthetic than utilitarian).

Attaching a scope onto a pistol is nothing new. Shooters have realized for some time that a scope on a

pistol can make good sense, both for older eyes that have trouble focusing on the rear sight of a pistol as well as for those wanting to get a better look at a target for better bullet placement. The first optical scopes appeared at the beginning of the twentieth century, with commercial models like the J. Stevens Arms & Tool Company's Pistol Telescope Model 115 appearing for sale in 1905.

For precision work, optical scopes with magnification are hard to beat. These are first choice for those using a hand cannon for varminting or firing at targets from a long range (contest rules permitting). For handgunners operating at short ranges in the field where targets are fleeting, a 1X-power optical scope or electric "dot" scope may be better than a scope offering magnification since a single-power scope permits shooting with both eyes open, gives a wider field of view, and, in the case of the dot scopes, has few parallax problems.

Electric dot scopes display a tiny red ball in their sight picture. The brightness of the dot can be adjusted according to the tastes of the shooter, making them ideal in daylight as well as in very dim light, permitting hunting into the dusk when those using optical scopes have to call it a day. The speed of acquiring a target also seems to be a bit faster for most shooters when they use an electric dot scope. For this reason, if you're interested in bringing a firearm onto target quickly day or night, the electric dot scopes are a good bet.

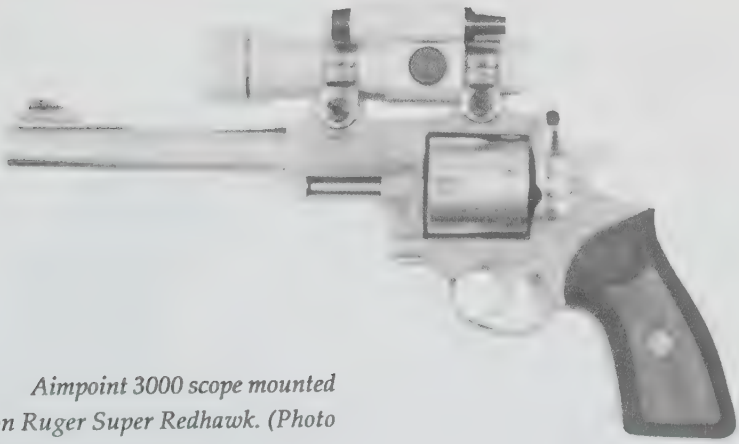
On the flip side, dot scopes don't offer much, if any, magnification. They aren't available in variable-power models, and the dot doesn't offer as precise an aiming point as the crosshairs of a scope do. Electric dot scopes also have complicated electronics in them, making them expensive, and their batteries eventually need to be replaced. None of the dot scopes currently on the market has a remote switch; shooters have to turn them on when they anticipate a shot coming up

and then remember to turn them off or risk having the batteries run down in a day or two. (Hopefully, a manufacturer will start adding a remote switch to its dot scopes in the future.)

The first electric dot scopes were 1-inch models, and many of these are still available. These smaller scopes are less expensive, but their narrow field of view makes acquiring targets slow until a lot of practice has been put in with them. Good choices in this category of dot scopes are Action Arms' Micro-Dot and Aimpoint's Series 3000 scopes, which mount in standard 1-inch rings. Prices run around $200, with a choice of blued or stainless finishes on most models.

For greater speed in acquiring the target, wide-bodied electric dot scopes are ideal. One of the best of these is the Aimpoint 5000 (with a 30mm field of view), available with a black matte or stainless finish. This scope can be powered by a pair of mercury SP675 batteries or, in cold weather, by a single lithium 2L76 or DL1/3N battery. The 5000 scope is 5.5 inches long and weighs 5.8 ounces; suggested retail price is $377.

Since the 5000 scopes have tubes too large for 1-inch Weaver rings, Aimpoint supplies larger rings that per-



Aimpoint 3000 scope mounted on Ruger Super Redhawk. (Photo courtesy of Aimpoint.)

mit easy attachment to standard Weaver-style bases. There are currently two models of the 5000: the 5000 Mag Dot with a large dot for quick shooting during contests or hunting and the standard 5000 with a smaller dot for more precise shooting.

The Aimpoint 5000 2-Power is based on the 5000 scopes with the addition of an optical system that magnifies the image. While one might expect that having 2X-power magnification would dictate one-eye aiming, in fact it is possible to shoot with both eyes open when using the 5000 2-Power *provided* the shooter is using the scope with his dominant eye. In such a case, a little practice makes it possible to shoot with the quickness the dot scopes offer while having the magnification of an optical system. Available in blue and stainless finishes, the 5000 2-Power retails for $367.

Aimpoint has also introduced the Comp scope, designed for competition shooting with "race guns" (modified semiautos fired over various combat-style target ranges). This scope can easily be adopted by

Tasco ProPoint electric dot scope is attached to this Smith & Wesson with a B-Square mounting system. (Photo courtesy of B-Square.)

hand cannon users, especially those employing their firearms for hunting. The Comp has a 30mm tube and a full 30mm field of view (unlike some other 30mm scopes). It is also light, weighing in at only 4.75 ounces. Retail cost is $308; finishes include blued and stainless.

Another good electric dot scope is Tasco's ProPoint III. With a 30mm tube (giving a 25mm field of view), this scope comes with mounting rings and detachable sun shields that screw onto the front or rear of the scope. The ProPoint III comes in two versions, one with a small dot for greater accuracy in bullet placement and the other with a big dot for faster target acquisition. Each of these models carries a $190 price tag.

Action Arms' 30mm dot scope is the Ultra Dot 30. It incorporates its battery pack into the small, click-adjustable brightness control knob, eliminating the cumbersome projecting battery pack seen on most other dot scope designs. Cost for the Ultra Dot 30 is $189, with stainless and matte black finishes available.

Those unconcerned about the total weight of their hand cannons but desiring a wide field of view with an electric dot image should consider Emerging Technologies' Laseraim Grand Illusion. This electric dot scope boasts a 50mm body that offers 300 percent more field of view than a 1-inch scope, making it possible to "find" the dot more quickly (when compared to narrower dot scopes). The Grand Illusion fits on standard Weaver bases without rings, thanks to integral claws mounted on it. Stainless and black finishes are available.

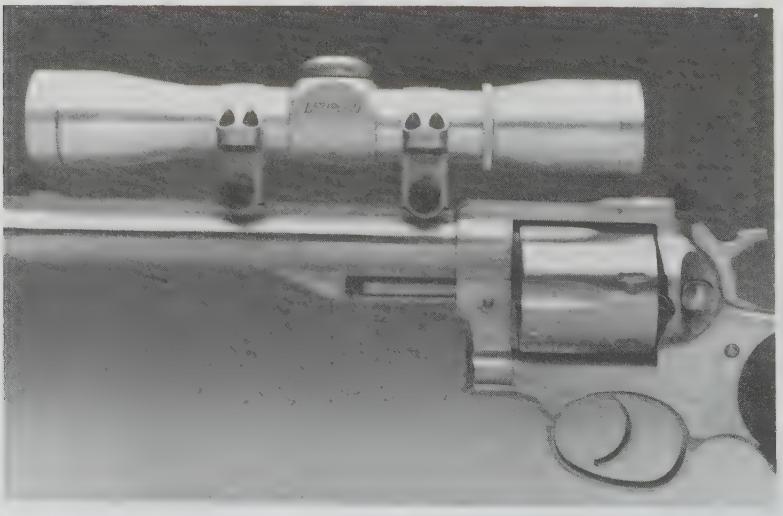
For those wanting an optical scope offering fast target acquisition, a one-power pistol scope is a good choice. This permits easy shooting with both eyes open to combine the images in front of the shooter into one panoramic display with what appear to be the crosshairs floating in the middle of things. With just a little training, most shooters can achieve this same two-eye

effect with a 1.5X or even 2X scope, giving them a bit of magnification as well as a wide field of view.

Greater magnification, at the sacrifice of wide fields of view, is often necessary for target or vaminting work. Pistol scopes offering 2X, 3X, and even 4X powers of magnification can be ideal. Best bets are name-brand scopes like those offered by Bushnell, Tasco, Burris, Leupold, Aimpoint, Action Arms, Williams, or others to ensure quality of the optics and proper repair of the scope if it is ever damaged.

Since higher magnification translates to more noticeable unsteadiness of the hand, most shooters find it essential to fire from a rest when magnification is being used with a hand cannon. Those planning on shooting off hand should add a 1X-power scope to their hand cannon and avoid scopes with 3X or more of magnification.

Among the best fixed-power scopes are the Burris LER series (with powers ranging from 1X to 4X depending on the model), the Leupold 4X EER, the Bushnell



Leupold 4X EER scope shown here on a Ruger Redhawk Hunter. (Photo courtesy of Leupold.)

Trophy Handgun series (2X), and Tasco's World Class series (2X and 4X), since all of these have 1-inch tubes that will fit standard 1-inch mounts.

Older variable scopes tended to be a bit fragile and weren't suitable for the high recoil of hand cannons. But this situation has changed; quality variable scopes now work well and hold up on these guns. One big plus of the variable scope is that it adapts a pistol to multiple uses. Higher powers are for varminting or other long-range shooting where a narrow field of view isn't a problem; lower magnifications can be employed for snap-shooting at game in the field.

Variable handgun scopes are relatively new. The first one was introduced by Burris in 1983, and other companies slowly followed suit with products of their own. But companies built on their experiences with making variable rifle scopes, so today's variable pistol scopes are as robust as their rifle counterparts.

Variable scopes do tend to be heavier, more complicated, and more expensive than fixed scopes. However, for those wanting to use a hand cannon for a number of different shooting situations, a variable scope makes good sense and certainly is better than purchasing several different scopes that have to be rezeroed each time they are exchanged.

Good choices among the variable pistol scopes are the Burris 1-7X LER, 2-7X LER, and 3-9X LER as well as the Leupold 2.5-8X and Bushnell 2-6X Trophy Handgun scopes. Like their fixed cousins, these variable scopes have 1-inch tubes for simple mounting with standard rings.

RANGEFINDERS

Bullet drop has to be compensated for at longer ranges. Such adjustments on either a scope or an adjustable rear sight is not a big deal *provided* you know how far away the target is and are familiar with the bul-

let drop of your cartridge. At a shooting range this isn't too hard to figure. In the field it can be very hard, and game isn't likely to stick around long enough for you to pace off the distance.

In the past, various types of rangefinders have been developed to take advantage of the difference in angle when looking at an object from two vantage points. Often these optical devices use mirrors to combine two different images in a single eyepiece. The shooter adjusts the rangefinder until the blurred image becomes sharp and then reads the distance off the gauge. These work well but are a bit slow and are only as good as the user's eyesight.

A better high-tech solution is the laser rangefinder. In the past these devices were seen only on tanks and combat helicopters, but recent advances in laser technology have brought the size down, and the cost, though still steep for most hand cannon users, is at least within the reach of most shooters.

One of the best of these is the Leica Geovid binocular/rangefinder system. To use the 7X-power binoculars, a shooter simply brings a varmint or other game into view and pushes a button on the rangefinder, and the precise distance to the target appears in glowing red digits superimposed on the target. The Leica system measures ranges from 25 to 1,000 meters, with accuracy being within 1 meter. The Leica rangefinder is available through Black Hills Ammunition company for $4,495.

LASER SIGHTS

Laser sights are sometimes also seen on hand cannons. Though most shooters will discover that they can live just fine without one of these contraptions attached to their pistol, laser sights do have several advantages, especially for hunters or those pressing a multishot hand cannon into service as a defensive arm. In addition to being useful on firearms, lasers are also occa-

sionally seen at dimly lit ranges where spotters behind high-power spotter scopes are able to pinpoint where a bullet has hit on a target so the shooter can instantly see where his last shot went.

The big drawback with lasers is that their beam is straight while a bullet's path is curved. While this still brings a zeroed laser sight within a few inches of where a bullet will strike within most of its flight, it may not be close enough for shooting over longer ranges at very small targets. Consequently, the laser shines (pun intended) at hunting and isn't so luminary when it comes to hitting paper targets at long range.

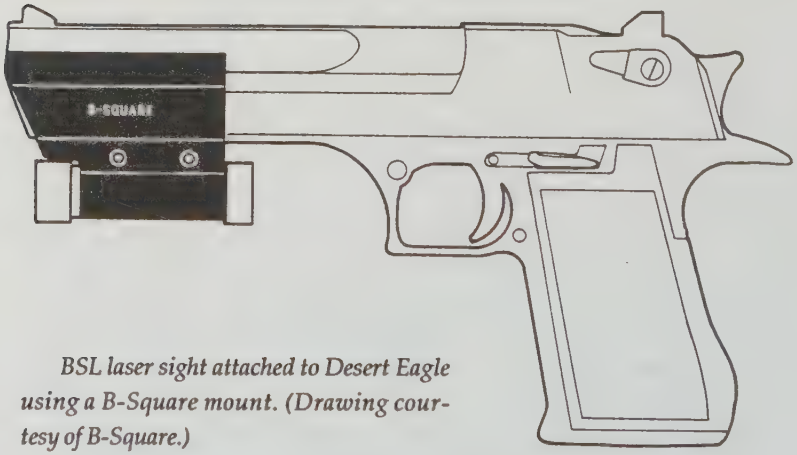
Another shortcoming is that lower-powered laser sights often can be viewed only within a hundred yards or so and can't be seen in bright sunlight, both of which make them less than ideal for long-range shooting during the day. This may soon be changing, however, as several laser manufacturers are working to bring down the bandwidth of their lasers from the red part of the spectrum to the orange area. In doing so, the beam becomes more visible and makes daylight use possible. Whether this will make laser use practical in the daylight remains to be seen, but it is a possibility.

Because of damage done to the eyes of many early laser users, today's commercial laser sights are limited in power by the United States government to a 5-milliwatt maximum. A 5-milliwatt laser produces a dot that can be readily seen in the dusk at several hundred yards, making it practical for shooters to use in the field. Less powerful laser sights are also sold, but hand cannon users are wise to avoid these unless they only want to fire over ranges within 50 yards or so.

Like optical and red-dot scopes, laser sights have elevation and windage screws. Some of these are in turrets similar to those of optical scopes, but most are small hex screws to help keep the size of the system down.

Zeroing is simple once the iron sights or scope on a hand cannon has been zeroed. With the laser in place, the iron sight or scope is centered on a bull's-eye and the laser adjusted so its dot is in the center of the target as well.

Adventurer's Outpost offers an excellent laser sight, the Tac-Star T4. This sight can be operated by a remote pressure switch mounted to the forend or pistol grip of a hand cannon. The T4 is 2.75 inches long by .75 inch in diameter and weighs 2.5 ounces with batteries. Its body is constructed of 6061 aluminum, with a choice of black



BSL laser sight attached to Desert Eagle using a B-Square mount. (Drawing courtesy of B-Square.)

or clear (stainless) anodized finish. Cost is $249. The T4 offers a full 5 milliwatts of output.

Another good laser sight is B-Square's BSL Laser Sight, which is only 3 inches long and 3/4 inch in diameter. The unit boasts a full 5 milliwatts of power and comes with a momentary switch. Cost is $260 for the black finish model and $270 for the stainless model. A cord switch costs an additional $20 (black finish) or $25 (stainless). B-Square also offers an Under Barrel Clamp mount for the BSL that places the laser conveniently below the barrel of most hand

cannons, and special mounts are available for the Desert Eagle and Smith & Wesson revolvers. The blued mount costs around $40, and the stainless finish goes for $50.

B-Square also has the Universal Scope Tube Clamp that mounts the company's laser to a scope with a 1-inch body, making it easy to attach the laser to a scope mounted on a hand cannon. Cost for the Universal Scope Tube Clamp is $40 for the black model and $50 for the stainless steel finish.

The Mini-Laser is the newest 5-milliwatt sight B-Square has added to its product line and is without a doubt one of the best lasers on the market. It is available with a T-slot mounting bracket that attaches to the finger guard of a firearm. The laser is held in place with an ingenious pair of spring clips. This makes it practical to slip the laser on or off as needed while keeping the laser very securely on the firearm since the fastening system operates at right angles to the weapon's recoil.

Finishes available with the Mini-Laser include blued and stainless, and its compact 1.1 x 1.1 x 0.6 inch size and minimal weight make it almost unnoticeable on a firearm. It operates on common lithium or alkaline A76 batteries. Both a "click" and momentary switch system are available for the laser sight, which carries a life-time guarantee and a toll-free service number.

An AR-15 mount makes it a snap to add a Mini-Laser to the XM231S or similar hand cannons. Careful measurements of the barrel and a call to B-Square will generally turn up a rifle or shotgun barrel mount that will permit attachment of the laser sight to the pistol. B-Square has also developed a series of mounts that attach the laser to the front of the frame or trigger guard of a number of pistols, though no hand cannons have yet appeared on this growing list.

Cost of the Mini-Laser is around $300, depending on the choice of black or stainless finish and whether a flip

switch or momentary switch is chosen. Dovetail mounts run an additional $60 for blued or $70 for stainless. The company's barrel mounts run $40 to $50.

Recently, Aimpoint has added a series of laser sights designed for specific guns. Unlike most other laser sights that have a bolted-on look, the Laserdot sights have a streamlined look that matches that of the pistol. This makes them very attractive on the firearm and also

Laserdot sight ahead of the trigger grip on this Desert Eagle makes for very fast target acquisition. Aimpoint 5000 red dot scope is attached to the top of the pistol using an Aimpoint mount. (Photo courtesy of Aimpoint.)

helps secure them during the punishing recoil of most hand cannons.

Aimpoint's Laserdot II is a compact, beautifully styled laser sight with a 1-inch body that can be mounted in the standard 1-inch scope rings that come with the sight. The 2.9-ounce laser comes with a short pressure

Laserdot II laser sight. (Photo courtesy of Aimpoint.)

switch and is powered by a 3-volt lithium battery. Windage and elevation adjustments are made by removing the front cover and using a small hex wrench supplied with the sight. Retail price for the Laserdot II is $319.

SCOPE MOUNTING

Whether a scope or a laser is being attached to a hand cannon, it's essential that the unit be rock solid and unmoving during the heavy recoil of a hand cannon. If the scope or laser sight moves, accuracy will suffer.

Any number of methods have been devised to keep scopes in place during the heavy recoil of a firearm. Some shooters have found that adding a bit of grit (usually gleaned from fine sandpaper) to the inside surface of the ring before mounting the scope in it increases the

friction between the two surfaces, keeping the scope in place. This grit can also scratch the surface of the scope, so a little care needs to be exercised during initial adjustment to prevent unsightly scratching of its surface when moving the scope in the rings.

The tightest of couplings won't be of much value on really heavy-recoiling hand cannons chambered for rounds like the .30-30 or .45-70. On these, shooters may discover not only loose scope mounts but even more violent damage like sheared mounting screws.

One way to increase the strength of the mounting system is to add more screws to the base. This work is best done by a gunsmith since drilling and tapping holes in a hand cannon can be botched easily.

Another way to increase strength is to add a third ring to the scope. This not only increases the friction between the rings and scope to help keep things secure, it also increases the number of screws holding the scope in place, thereby lessening the chance of actual damage to the mounting system. Some mounts have three or more cuts, which permit easy addition of a third ring on the scope. Others require some careful file work to cut a position in the mount.

E. Arthur Brown Company offers a Triangle Force mount that has a three-ring base. The base fits standard Thompson/Center Contender screw holes as well as the BF Pistol. In addition to holes for the Contender's four screws, two spare holes have been drilled in the base. These permit drilling and tapping a barrel to accept a total of six screws, thereby greatly strengthening the mount. E. Arthur Brown sells the Triangle Force mount and rings for $40 and will install the mount on a customer's barrel for $20 (or will do the work for free if a barrel is purchased from the company).

Another trick to help secure a scope to its rings and mount is tightening the screws or nuts on the rings and mount, then tapping the screwdriver or wrench with a

mallet while it's in place on the screw or bolt. This generally will loosen the threads slightly, permitting another quarter turn for an even tighter fit. Care does have to be taken not to overdue things, as too much torque will strip the threads on a bolt or a screw, thereby ruining its ability to secure the scope.

E. Arthur Brown has also created the Maxi-Mount consisting of a base with rings machined into it, thereby doing away with any possibility of the rings coming loose from the base since the whole unit is one solid piece of high-tensile-strength aluminum. The mounting screws supplied with the base are extra long so they can be cut to length for the depth of hole on a barrel (and therefore may need to be shortened for non-bull-barrel hand cannons). Models of the Maxi-Mount are available for the Smith & Wesson Model 29/629 (for $73), Freedom Arms Casull ($90), Thompson/Center Contender ($70), and E. Arthur Brown BF pistol ($70). Finishes include electroless nickel and blued.

Low scope mounts can present a problem with the Thompson/Center Contender, Ruger Super Blackhawk, Smith & Wesson 29/629, and other hand cannons whose hammer spurs ride close to the rear of the scope tube. A quick fix for this dilemma is a hammer extension that clips onto the spur, presenting a knurled knob to the side of the hammer for the shooter to thumb-cock. One way to get one of these is to go to a gunsmith and have him weld a small extension to the hammer spur.

For those using more popular hand cannons, Uncle Mike's offers extension knobs designed specifically for the Super Blackhawk, Model 29/629, and Contender (with two different models for the latter—one designed for guns with serial numbers below 234255 and another for the newer hammer style on models 234256 and later). Cost is just $7.

AMMUNITION

Of course the best accuracy with hand cannons can't be achieved with only a quality gun equipped with a good sighting system. Peak performance requires lots of practice and, usually, carefully tailored handloads.

That's not to say that commercial ammunition is inaccurate. Federal, CCI, Winchester, and Black Hills all offer "premium" lines of ammunition that provide very fine accuracy. Furthermore, these companies have created bullet designs that achieve peak performance at the target—an important consideration for those using hand cannons for hunting.

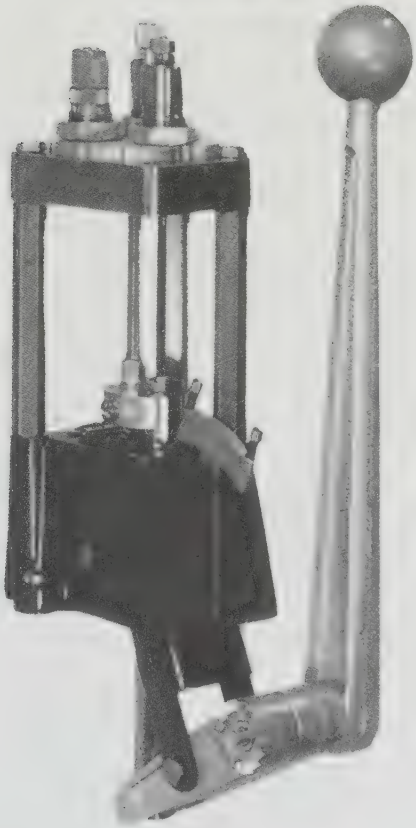
Since practice makes perfect, many shooters prefer buying commercial ammunition for extended firing sessions. The spent brass from such sessions can then be employed for special handloads the shooter is developing. PMC, Federal, and Winchester all offer generic ammunition that carry very low price tags, making it ideal for extended practice.

RELOADING

Most serious target shooters reload their own ammunition. And reloading is part art and part science.

The main concern in reloading is to exercise a lot of caution, being sure that all cartridges are loaded properly and consistently. If you're serious about obtaining accuracy, then you need to keep a written log showing components, type of brass, type and amount of powder, and the bullet weight and style. This will enable you to slowly improve loads until you have one that will give you maximum performance in your hand cannon.

If only small numbers of cartridges will be fired at a time, then you can get by with a very inexpensive reloading press. Often these presses give the best of results since you can inspect the cartridge during each step of its reloading to be sure powder measures are precise, primers seated properly, and so forth.

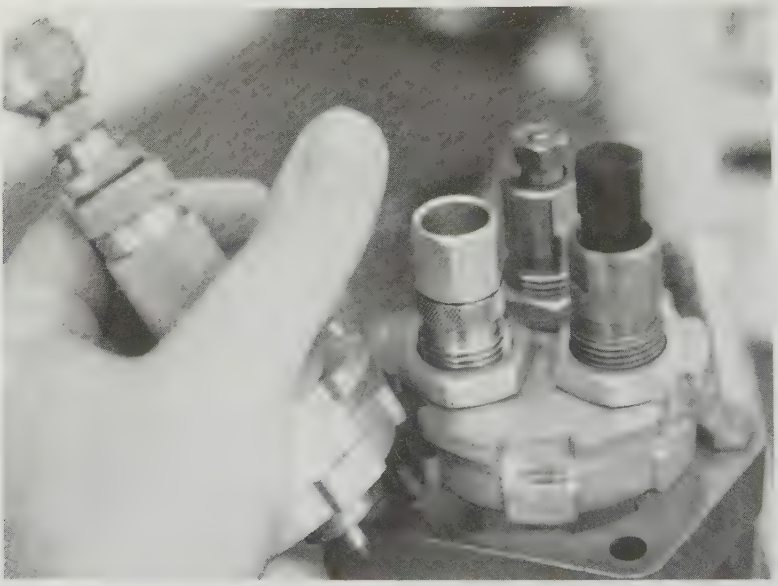


Lee Turret Press. (Photo courtesy of Lee Precision.)

My favorite reloading presses are those offered by Lee Precision. The company offers quality products, which also carry low price tags.

The Lee Reloader Press is a single stage that is good for loading short runs of cartridges. It's a little slow—you have to unscrew each die before going to the next step—but the $25 price tag is hard to beat.

The Lee Turret Press is relatively inexpensive ($68 for the press or $102 for a complete kit for loading one cartridge) while having the advantage of an "automated" indexer that rotates the dies, making it practical to rapidly load each cartridge. The die sets can be left in the hold-



Die sets on the Lee Turret Press are easily exchanged in just a moment by snapping one set out and another set in.

Lee Hand Press permits reloading at the range or in the field. (Photo courtesy of Lee Precision.)

ers, snapping in or out to permit quick changes of dies without the need to readjust them—an important point for those reloading several different cartridges.

A few shooters in a hurry to develop an accurate load take their components to the shooting range, loading several cartridges and test-firing them, then trying another variation to see if it shoots better. This allows them to develop an ideal load without having to run to and fro

from shop to range. The Lee Hand Press is ideal for such a project because it doesn't have to be set up on a bench. It costs only $23, or $60 for a complete kit of dies for one cartridge plus the press, case lubricant, powder funnel, etc.

If you're putting a lot of rounds through your hand cannon (which will often be the case with revolvers or semiautomatics), then you'll probably want to step up to a progressive press to take some of the drudgery out of reloading. The Lee Load-Master can handle both rifle and pistol rounds. The conversion from one chambering to another is pretty easy thanks to Lee's snap-out die turrets that permit leaving the dies in place so they don't need to be readjusted.

The Lee Load-Master automatically inserts the case and advances it, automatically positions the primer, drops in a powder charge, and seats a bullet on the cartridge while you activate the lever that powers everything. Since this whole operation is muscle powered, you have some feel for what's going on and can easily detect any jamming that, on rare occasions, may occur.

Once the storage bins on the Lee Load-Master are filled with brass, bullets, powder, and primers, you just pump the handle, watching to be sure everything is going as it should, and a newly loaded cartridge drops out with each pump. Retail price for the Load-Master is $189 plus the cost of the dies and shell holder (also available from Lee). A complete kit of dies and the Load-Master is available for $330, so you can practically start loading ammunition right out of the box, as it were. Like all the Lee equipment, this press comes with good instructions to get you started out right.

Lee sells excellent die kits with a strong deprimer that almost never breaks. The company carries all the most popular chamberings and also offers carbide dies like those used in commercial reloading operations (where the dies are cycled 4,000 to 5,000 times *per hour*).

Carbine die sets are available for .44 Magnum, .30 Carbine, .45 Winchester Magnum, and .454 Casull along with popular handgun cartridges.

If you're firing a hand cannon that uses a wildcat round, then finding dies for it can be tough. Your best bet is to check E. Arthur Brown Company's catalog. This company carries a full line of dies, including carbide and titanium carbide dies for both commercial and many of the wildcat chamberings used in hand cannons.

One trick used by commercial ammunition manufacturers to obtain greater accuracy with their cartridges is to add a crimp to the case, setting the bullet tightly in the brass. This keeps the bullet in place during the initial burning of the powder, making the performance of the cartridges more consistent from one shot to the next. For a long time reloaders didn't have access to this process. But recently Lee Precision has started offering a crimp die that can be used even with smooth-jacketed bullets. This allows reloaders to eke out a bit more accuracy with handloads and is well worth the $12 priceof the die.

The depth to which a bullet is seated in a cartridge can improve or degrade the accuracy of a firearm. Shooters using a semiauto, revolver, or magazine-fed hand cannon don't have a lot of leeway in bullet-seating depths. Bullets have to be well into the cartridge in order to cycle through the action of these guns. But single-shot hand cannons are a different matter.

Generally, better accuracy can be achieved by seating a bullet so it is just shy of touching the rifling beyond the forcing cone of the barrel. However, dangerous pressures can be created if the bullet is jammed into the rifling so it has trouble getting started "down the tube." And obviously you wouldn't want to be using maximum powder loads with bullets seated so high that when the cartridge is chambered it leaves the bullet touching the rifling.

If care is taken, the practice of seating the bullet for-

ward can produce improved accuracy with most cartridges. The reason for this improvement is a matter of argument, but it appears that the shorter the jump across the chamber gap leading to the rifling, the less the bullet deforms and the greater the conformity between one bullet and the next going down the bore. The improved accuracy is often small but noticeable with most cartridges. Best of all, the seating depth is easily adjusted, with most reloading dies making it possible to adopt a seating depth that can be maintained from one cartridge to the next that runs through the press.

The proper seating depth is tricky to figure out, and a set of calipers is a big help. One method is to use a bullet in empty brass that hasn't been resized (so the bullet can easily slide into place in the neck of the cartridge). This dummy cartridge is chambered very gently, closing the action behind it with as little force as possible. The cartridge is then taken out and the overall length measured. This measurement gives the distance to the rifling. By backing off from this maximum slightly, the reloader can create loads with bullets that just about reach the rifling but don't quite touch it.

E. Arthur Brown Company's Chamber-All offers a more precise method of determining seating depth for a bullet. This tool consists of a dummy cartridge with a long rod extending from its rear and running through the cartridge. By chambering the dummy cartridge with the bullet to be loaded into actual rounds, it is possible to push the bullet forward with the rod, feeling when the ogive of the bullet touches the rifling.

The rod is then locked in place and the bullet and cartridge removed. Measuring the overall length of the cartridge section of the tool along with the bullet gives the maximum overall length of a loaded cartridge. By keeping reloaded ammunition length just below this maximum, it's possible to seat bullets for accuracy without exceeding safe lengths. Cost for the

tool is $30 for the rod and dummy cartridge holder. A dummy cartridge costs $4 more for a standard chambering or $6.50 for a wildcat. E. Arthur Brown Company also carries a Comoparator Attachment that permits easy measurement of each cartridge to keep it under the maximum determined by the Chamber-All, making it a very useful accessory. Cost is $12, and a Comoparator Attachment runs an additional $3.

As hand cannon shooters become more skilled at reloading ammunition, they may wish to consider taking extra steps to increase the consistency of their ammunition along with its accuracy. Trimming cases to uniform size, making flash holes uniform, weighing brass cases, and carefully prepping the primer pocket are all steps that yield incremental results.

Brass becomes valuable to the reloader, especially when he has a special lot that seems to give good results. Having a small bag (or baggy pockets) for storing spent brass is a must. Those shooting semiauto hand cannons may wish to invest in a brass catcher since one of these can save a lot of time searching and bending after a day at the range. Brass catchers also help keep ammunition clean, saving a lot of work as well as the possibility of scratching reloading dies with grit trapped in the brass.

Rigid brass catchers are less apt to catch in semiauto actions than cloth catchers. E&L Manufacturing offers excellent rigid brass catchers for the XM231S and some of the pistols based on the 1911A1 action. These are made of rigid plastic and clip to the firearm, trapping up to 60 empties while the hand cannon fires. Cost is $30 per catcher.

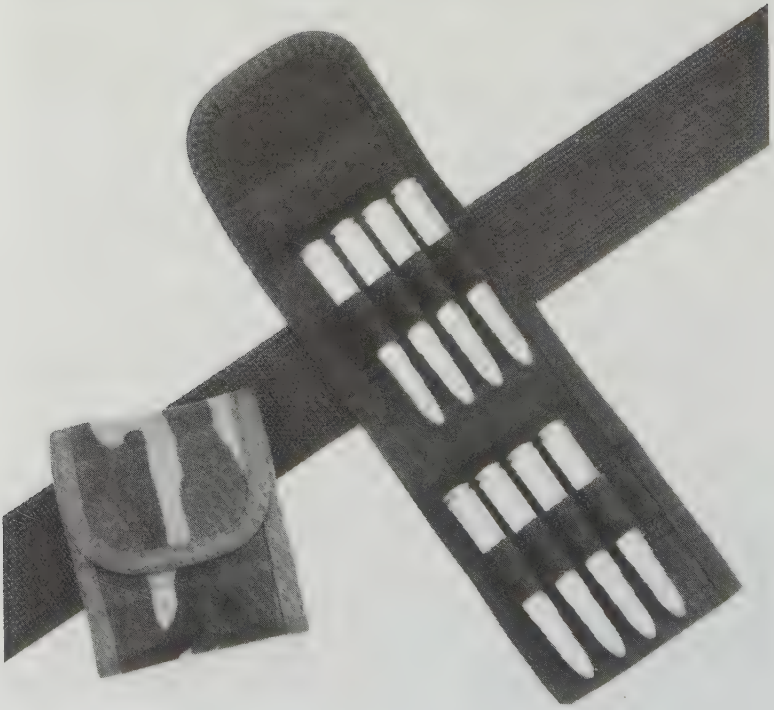
Semiautos hold their cartridges safely in magazines, making carrying spare rounds of little concern to these hand cannon users. Things aren't so rosy with single-shot guns, however. Reloading becomes a hassle if a lit-

tle thought isn't given to how to carry the shells so one can be quickly grasped and chucked into the chamber of the firearm.

A bandolier is one solution, though it isn't ideal for use in rough terrain or in dirty environments since cartridges exposed to the elements can pick up grit. Consequently, pockets or pouches may be a better route, unless the bandolier is being worn under a raincoat or used in a mild environment.

Uncle Mike's has several Cartridge Slides that permit adding bandolier-style sections to a belt or harness. Cost is $9 for handgun cartridge slides or $12 for rifle

Uncle Mike's Cartridge Slide makes it convenient to carry ammunition on a belt or harness. (Photo courtesy of Michaels of Oregon.)



Uncle Mike's Folding Cartridge Carriers in folded and unfolded configurations. (Photo courtesy of Michaels of Oregon.)

cartridge slides. Even more ideal is the Uncle Mike's Folding Cartridge Carrier, which protects the cartridges until the Velcro fastener is released to reveal a bandolier group of cartridge loops. Retail price is $15.

Modern elastic has permitted shooters to create ammunition loops inside pockets and pouches so ammunition can be held base up, ready to be grasped in a moment. Elastic has also been used for wrist cartridge holders and other gadgets. These may be useful to some contest shooters, though care must be exercised to keep the cartridge clean. It's better to take a little extra time in reloading than to rapidly chamber a round that has enough dirt on it to

damage the chamber of your hand cannon or destroy the accuracy of the cartridge due to damage to the round itself. Contest shooters wanting a wrist band carrier should check out the one offered by Uncle Mike's for $13.

HAND CANNON HOLDS

Of course, the best ammunition in the world is of little use if your pistol is wandering around the target in unsteady hands as you attempt to fire. Any number of ways have been devised to help steady firearms. Some of these, like electric gyro systems, have proven to be horribly impractical. Others have a lot of merit and can be adapted to a variety of shooting conditions, both in the field and on the target range.

Holding a hand cannon off hand is tough. The weight of the gun even with the off hand on a forend causes the muscles of the arms and wrist to constantly adjust to the load, creating a wobble that moves the point of aim around ever so slightly. This movement, though slight, translates into inches or even feet by the time a shot is fired and the bullet reaches its target.

Skilled shooters who have practiced until they know exactly when a trigger will break can anticipate when the sights will cross the target during the muscle wobble dance. This enables these shooters to fire off hand the exact instant the pistol is aligned with the target. But even these shooters can achieve better accuracy with a steadier firing position.

A number of holds have been adopted by shooters to steady their pistols. Some fire from a reclining position—head and upper chest in a "curl" with the hand cannon rested against the side of a bent leg. This gives surprisingly good accuracy, though the position itself becomes a bit uncomfortable.

With hand cannons having a relatively mild recoil, it's possible to employ a cross-armed hold with the barrel resting just above the crook of the off arm. This is not

as steady as one might hope, but many shooters discover it is better than a two-handed hold, especially with heavier handguns. Another plus is that it brings the pistol close enough to the shooter's face to permit the use of rifle scopes (which have much shorter eye relief than do pistol scopes). Of course, this cross-armed hold can't be used with larger chamberings since the recoil will send the pistol banging against the shooter's face, creating very interesting wounds such as black eyes, broken teeth, and bloody noses—none of which are conducive to a gunner's enjoyment.

Often a rest can be improvised from a backpack, binocular case, or some other make-do system to help steady a hand cannon and thereby increase the accuracy of a shot. A tree branch or even the thumb of a hand resting against the trunk of a tree makes an excellent rest that can be exploited in a kneeling or standing position.

Shooters through the years have also experimented with shooting staffs. These are often walking sticks with a fork or branch upon which the forend of a pistol can be rested. One rather odd variation of this is a rod that fastens onto a shooter's belt and then extends upward to the forend of the pistol. This produces a steadier shot because of the support offered by the shooter's waist. The device works but is somewhat awkward, and commercial versions of it have since gone out of production.

Slings can also steady a hand cannon. To do this, the shooter loops the sling over his off-hand shoulder and around his back. The slack is adjusted so it becomes taut when the pistol is brought into firing position, acting like the guy wires that steady a tall radio tower.

Ideally, the sling mounts will be placed on the stock of a hand cannon to prevent barrel flex. Bull barrels and single-piece bolt-action stocks are less apt to flex with a tight sling hold. But care has to be taken with any firearm not to create a situation where the point of impact on the gun changes as more pressure is applied

to the barrel with the sling. This is especially true with break-open actions.

Most hand cannons are either equipped to accept sling swivels or have sling adapter kits available for them. The few that don't will often accept a universal sling swivel mount like that offered in a variety of styles by Uncle Mike's.

The Uncle Mike's QD 115T/C swivel kit is designed specifically for the Thompson/Center Contender. Uncle Mike's also offers a "universal" nickel-plated swivel kit that can be used to match the finish on stainless steel or nickel-plated guns. A trip to the gunsmith or, for do-it-yourselfers, a gunstore, and a few dollars will give you a swivel just about anywhere you care to put one on the stock.

Mounting a swivel is pretty simple. The key is to use a small drill bit to position the hole instead of simply screwing the swivel base directly into the wood or plastic and risking splitting the wood. Best bet is drilling a pilot hole first, taking care to keep it perpendicular with the edge of the stock.

Those wanting to remove the sling from their hand cannon from time to time should consider Uncle Mike's detachable sling swivels. These attach to a post that is permanently set into the stock. To remove the sling, a stud on each swivel is depressed and the cross piece connected through the post is retracted, freeing the swivel and the sling. Another advantage of these is that, once the swivels and sling are removed, there isn't any hardware to clatter against the stock if you're trying to move silently through the brush—a big plus for hunters. Cost of this style of swivel runs from $9 to $14, depending on the model.

The slings available in today's marketplace vary from poor to excellent. Among the worst are the cotton webbing slings often found at military surplus stores. These will do if you'll rarely use a sling (and many

shooters find this to be the case), but if you'll be in the field for long periods of time, then a quality sling is a good investment for your hand cannon. Leather slings are also available but are expensive and less than durable, especially if you'll be shooting in the rain or snow. Usually a better choice is a tougher nylon sling available in a variety of colors and styles and with low price tags.

If you'll be carrying a hand cannon on a sling for extended periods, a padded sling is ideal. The best of these is Uncle Mike's Ultra Sling, a tough Cordura sling that comes in a choice of black, brown, standard camouflage, or Trebark camouflage finishes and costs only $15. These nylon slings are available at most gun stores.

In some situations, bipods can be effective on many hand cannons. In the field, natural obstructions often make shooting from the prone position less than practical, as brush or other terrain features make it impossible to see a target once the shooter drops to the ground. On the other hand, at the target range or in hilly or desert areas, it's often possible for a shooter to improve his accuracy with a bipod. Military surplus metal "clothespin" bipods developed by Colt for the U.S. military are usable and quick to put onto a hand cannon, but they are rust prone and hard to carry when not in use. A better variation is Ram-Line's Universal bipod. Costing only $10, this tough plastic bipod can be quickly mounted or taken off a hand cannon. Its light weight makes it practical to carry in a pocket, whipping it out and placing it on the firearm when it's needed. A nylon carrying pouch is also available from L.L. Baston in a black or cammo finish for just $7.

Another popular bipod is the lightweight aluminum Harris bipod. Looking somewhat like a Rube Goldberg contraption due to its external springs, the Harris bipod

Harris bipod mounted on an XP-100. (Photo courtesy of Harris Engineering.)

works well. Its legs fold up under the barrel and forend of a hand cannon when the unit isn't needed, and they flip down into a locked position when the shooter decides to employ them.

The Harris bipod Model 25 has legs that adjust from 12 to 25 inches; the Model L has shorter 9- to 13-inch legs; the Model BR has short legs that adjust from 6 to 9 inches; the Model LM adjusts from 9 to 13 inches, with its legs ejecting by spring action rather than retracting by spring action as with the other models. The Model H adjusts from 13.5 to 23 inches and the Model 25C from 13.5 to 27 inches, making them practical for firing from a seated position (though this isn't as steady as a prone position). Each of these models

comes in two styles: a standard stationary bipod or the S 45-degree swivel model that levels the gun even if the shooter is on sloping terrain. Costs range from $38 for the smaller standard models to $64 for the longer S styles.

B-Square's Ultimate bipod is constructed of aluminum and weighs only 8 ounces. The Ultimate has a sleek appearance thanks to internal springs (a feature that also helps minimize picking up dirt or vegetation in the brush). The self-leveling, spring-locking legs can be folded up or deployed quickly and are offered in a choice of black and stainless finishes.

The Ultimate bipod attaches to the barrel of a hand cannon with a bracket that surrounds the barrel and is adjusted and locked into place with two bolts. Currently there are three versions of these bipods available: the Rigid with legs that lock into place without any tilting; the Tilt, which allows for leveling the hand cannon on an uneven surface; and the Roto-Tilt, which both rotates and tilts for maximum adaptation to conditions in the field as well as "panning" shots at moving targets. B-Square also offers optional extension legs for its bipods, permitting a shooter to create a bipod high enough to fire from a sitting position. Retail cost for bipods is $59.95.

CLEANING

Accuracy can be a lot more than a quality gun, carefully crafted ammunition, and a steady hand and eye. Often it's necessary to keep the barrel religiously clean, perhaps to the point of cleaning the bore every few shots. If care isn't taken, this cleaning can quickly ruin a good barrel, so a few precautions are in order before you start running steel brushes and rods up and down your investment's innards. Reading the owner's manual before cleaning your hand cannon can give you lots of good pointers and may make the

difference between a firearm that works flawlessly and one that performs poorly.

Of course, before doing any cleaning or repair on your hand cannon, it goes without saying that you should be sure it's unloaded. That said, the main concern is to clean the bore without putting any extra wear and tear on it, especially to the last inch near the muzzle since that's the part that touches the bullet as it leaves the firearm. Damage near the crown of any firearm will hurt or even ruin its accuracy.

For starters, avoid aluminum, plastic-coated, and brass cleaning rods. These all pick up grit and can turn what should be a soft rod into a small file that leaves minute scratches in the bore each time it is cleaned. Pull-through cleaning kits work but can also pick up grit, making them abrasive. The best bet is a steel rod for cleaning work on a hand cannon.

You should clean your firearms slowly, taking care not to let the rod rub against the sides of the bore, especially at the muzzle end of the barrel. Whether pulling patches and a brush through on a string kit or shoving them through with a rod, the objective in cleaning is to move dirt in one direction, from the chamber to the muzzle. Never stroke patches or brushes back and forth since this only shoves fouling up and down the bore without getting all of it out.

Since a bent cleaning rod can put a lot of pressure against the inside of the bore, it should be checked from time to time to be sure it's straight. Rolling it on a flat surface makes this easy to check.

To commence cleaning, shove a brush soaked in solvent through the bore with the cleaning rod. The best solvent for this purpose is one of the new solvent/lubricants that makes cleaning more of a one-step operation than it is with a separate solvent followed by the application of oil. Many of the new high-tech cleaners are great for this. Break-Free is one of the

tried and true lubricants, though others are equally good and perhaps better.

Running the solvent-soaked brush through the bore loosens dirt. This should be done a time or two and then tight, dry patches run through the bore, from the chamber toward the muzzle. These are followed by a patch soaked in solvent, leaving the bore liberally coated with cleaner.

Most solvents work best if they remain on metal for a half hour or more. So ideally you'll take a break at this point in the operation, though if you're at the range or in a rush you can continue without too much loss.

Next a wire brush is sent through the bore, followed by a series of alternating solvent-soaked and dry patches until patches come through clean. Once the bore is clean, a dry patch is run through it to get rid of the excess lubricant if the pistol will be fired soon, or, if the hand cannon is headed for storage, an oil-soaked patch is run through it one final time to protect the bore from rust.

After you've cleaned the bore, the rest of the mechanism should be cleaned, with special attention paid to the bolt face, extractor, and firing pin areas. Carefully remove fouling from all the crevices of the bolt face as well as from the extractor claw and the firing pin and its hole. To help prevent rust, a very light coat of lubricant on the bolt and trigger group and all blued exterior metal parts is wise.

Stainless steel needs a light coat of oil or car wax to maintain its shine, and stainless steel moving parts need lubrication to prevent binding and excessive wear. Unsightly discolorations on the surface of stainless steel are easily removed with an ink eraser, which is just abrasive enough to cut through the thin skin of oxidized metal without taking off too much steel or leaving scratches. When working with the eraser, move it in the direction of the original machin-

ing and tooling cuts so the finish blends into the other areas of the firearm.

In dusty environments, the exterior coat of oil on a firearm should be minimized since it attracts dirt. A hand cannon headed for storage should have a heavy coat of oil on all blued surfaces and in its bore to prevent rust. This oil must be wiped off before firing the hand cannon or damage to the bore may result.

Before firing a hand cannon, inspect its bore for patch threads, oil, or foreign materials. Firing a gun with any foreign material in the bore will wreck the barrel and probably do some damage to both body and pride.

Shooters in areas with high humidity should invest in a stainless steel hand cannon or one with a quality electroless nickel plating. These guns will resist the moisture that can rust a blued finish in just a matter of days.

STORAGE

Not only do rust, scratches, and dings make a hand cannon look bad, they can also affect accuracy by damaging the sights or scope mounted on the pistol as well as ruin the crown of the bore. For this reason, whether a hand cannon is stored in a closet or carried to a contest, it's important to protect it from inadvertent damage. The best way to do this is to keep it in a quality carrying case.

Leather or air-tight plastic storage cases or bags might be used to carry a hand cannon to or from a range or contest. But a gun should never be stored in such a case for more than a few hours. Leather attracts moisture and often contains acids that attack metal, while plastic containers permit moisture to condense inside them, promoting surface rust.

Uncle Mike's black Cordura Range Bag is ideal for storing and carrying hand cannons. The bag can be locked (by running the hasp of a small padlock through its dual zippers) and has three compart-

Uncle Mike's Gear Bag. (Photo courtesy of Michaels of Oregon.)

ments with two padded inserts for the side pockets and a large central compartment for carrying cleaning gear, ammunition, and those all-important candy bars. The case measures 16 inches long and is 7 inches high and 8 inches wide, making it ideal for all but the largest hand cannons. The retail price for the Range Bag is around $70.

The Gear Bag from Uncle Mike's is constructed of Cordura and is available in black or woodland camouflage finish. The bag has a large center compartment and measures 18.5 inches by 11.5 inches by 9.5 inches deep, making it possible to stash a very large hand cannon in it. The catch is that the case wasn't actually designed for this purpose and therefore lacks padding. But this problem is easily overcome by wrapping a firearm in an oily towel before placing it in the Gear Bag. Cost is $60.

Uncle Mike's Pistol Rug is another viable way of carrying a small hand cannon. The largest of this line of rugs holds a revolver or semiauto with a 9.5-inch or smaller barrel. These rugs can be locked by placing a padlock in the zipper tongue and through the hang-up loop of the rug, making it possible to store the gun "locked" if you're unfortunate enough to live in a state intent on protecting burglars from home owners. These Cordura rugs come in black, green, camouflage, or blue. Cost is $16.

Measuring 33 inches long, Uncle Mike's Tactical Case is ideal for large hand cannons. The black Cordura case comes with a sling for easy carrying over the shoulder and also has two carrying handles. Three velcro pouches on the side of the case can carry ammunition, cleaning kits, or what have you. Cost is $77.

L.L. Baston also offers several excellent bags for carrying hand cannons. The Shooting System line includes the Special Agent's Case, measuring 18 inches long by 13 inches high and 3 inches wide. This padded black case has an adjustable sling strap and two carrying handles. Cost is $50.

The black Range Bag, also available from L.L. Baston, measures 18 inches long by 11 inches high by 10 inches wide. The bag features two outside pockets with a removable insert for the middle storage section. All three sections are zippered and divided, padded compartments making it possible to store up to four medium-sized handguns in the case along with ammunition, earmuffs, etc. Cost is $150.

For maximum protection of a gun in the field, a padded nylon holster is hard to beat. Given the size of most hand cannons, a belt holster is impractical; shoulder holsters make a lot more sense since they keep the gun up high enough to be out of the way and also avoid the danger of sagging pants.

Uncle Mike's offers an excellent Vertical Shoulder

Holster line, with versions that will accommodate hand cannons with scoped 10-inch or even 14-inch barrels, including most Thompson/Center Contenders (with the exception of those having a 16-inch or longer barrel). These tough Cordura holsters are padded for protection of the firearm and are available in black or cammo finishes. The across-the-back straps permit perfect adjustment of the holster for a comfortable carry. The retail price tag is $43.

Given the weight of many hand cannons, it makes sense to couple a sling to a flapped holster when carrying them in the field. This gives the firearm maximum protection while permitting shifting the weight from shoulder to shoulder or even carrying the outfit in the hand. Uncle Mike's has a commercial version of this type of holster arrangement marketed as the company's Sidekick Bandolier Holster. This holster has a snap flap (which can be replaced with a snap retention strap) and is attached to a wide, padded sling. The holster itself has a belt loop incorporated into it so it can be secured to the body. It is available in cammo and black finishes, left- and right-handed models, and three sizes to accommodate scoped hand cannons with 6.5-inch barrels up to 10.75-inch double-action revolvers, an XP-100 with a 10-inch barrel, or a Contender with a 14-inch barrel. Cost for these holsters is $57 each.

At home, a gun safe makes more and more sense these days, especially given the high price tag most hand cannons carry. No safe will stop a determined criminal, but a good safe will stop most teenagers and petty thieves normally involved in house break-ins. A good gun safe will also slow down the real professional criminal and make it obvious that the firearm has been stolen when you report the theft to the police and your insurance agent.

One good but inexpensive safe is the Homak line

sold by K-Mart and other companies. These safes have dual locks, and their steel construction resists all but the most determined attempt to open them. Cost for a small Homak safe is in the $100 to $200 range. If you have a smaller hand cannon, you might be able to fit it in a smaller handgun safe, though most hand cannons are too large for these strong boxes. For a detailed look at gun safes, see my book, *Poor Man's Fort Knox*, available from Paladin Press.

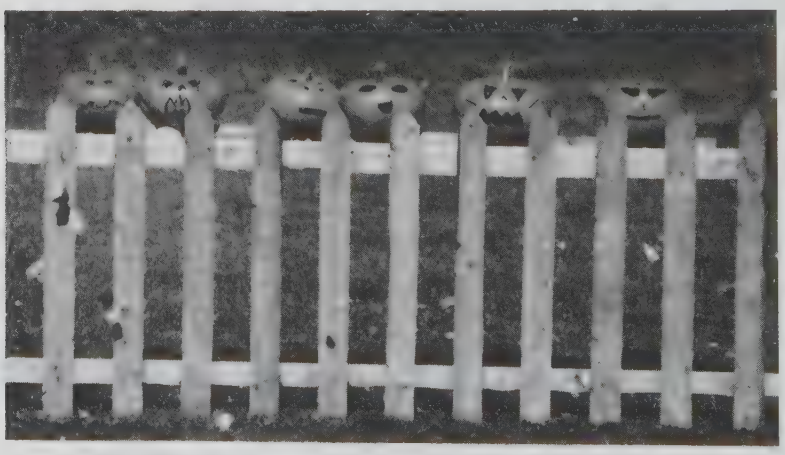
Where is it Headed?

CHAPTER 7

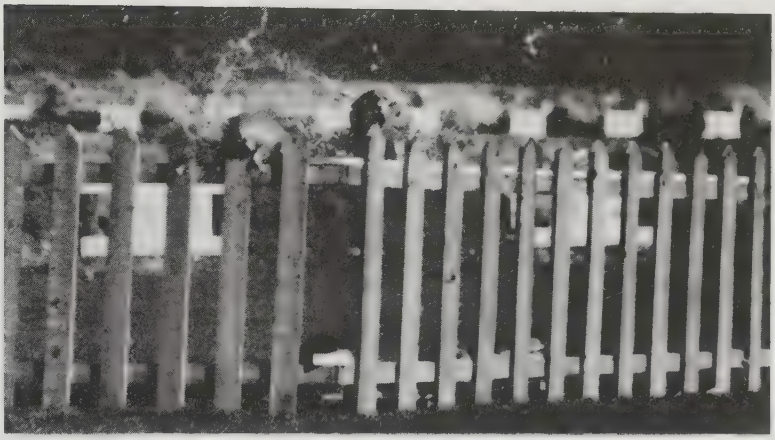
HANDGUNNING SPORTS HAVE HEADED IN UNEXPECTED directions. When Colonel Jeff Cooper started his shooting contests in the 1950s in an attempt to create realistic combat situations, it seems unlikely that he envisioned the "race guns" used in today's International Practical Shooting Confederation contests—with compensators, scopes, and other doohickies. Nor does it seem likely that those first adventurers who fired modern .357 Magnum and .44 Magnum revolvers at game animals would have pictured today's silhouette contests and the pistols that have developed from that pastime. Today's unimaginable is tomorrow's commonplace.

For those worried about where trends are headed, one thought-provoking contest took place during an exhibition shoot staged by Magnum Research. Shooters, armed with various models of the Desert Eagle, slaughtered a row of jack-o'lanterns lined up on a fence post. A tongue-in-cheek video was even made of the event, marketed as *The Last of the Wacko-Lanterns* or *Shattermelons Go Berserk*. Considering the Frisbee and Hula-Hoop, stranger things have become

Only time will tell what types of contests may develop around today's hand cannons. Here, shooters armed with Desert Eagles take careful aim on their targets—pumpkins. (Photo courtesy of Magnum Research.)



"Wacko-Lanterns" lined up, with first "victim" shattered by a hit from a hand cannon bullet. (Photo courtesy of Magnum Research.)

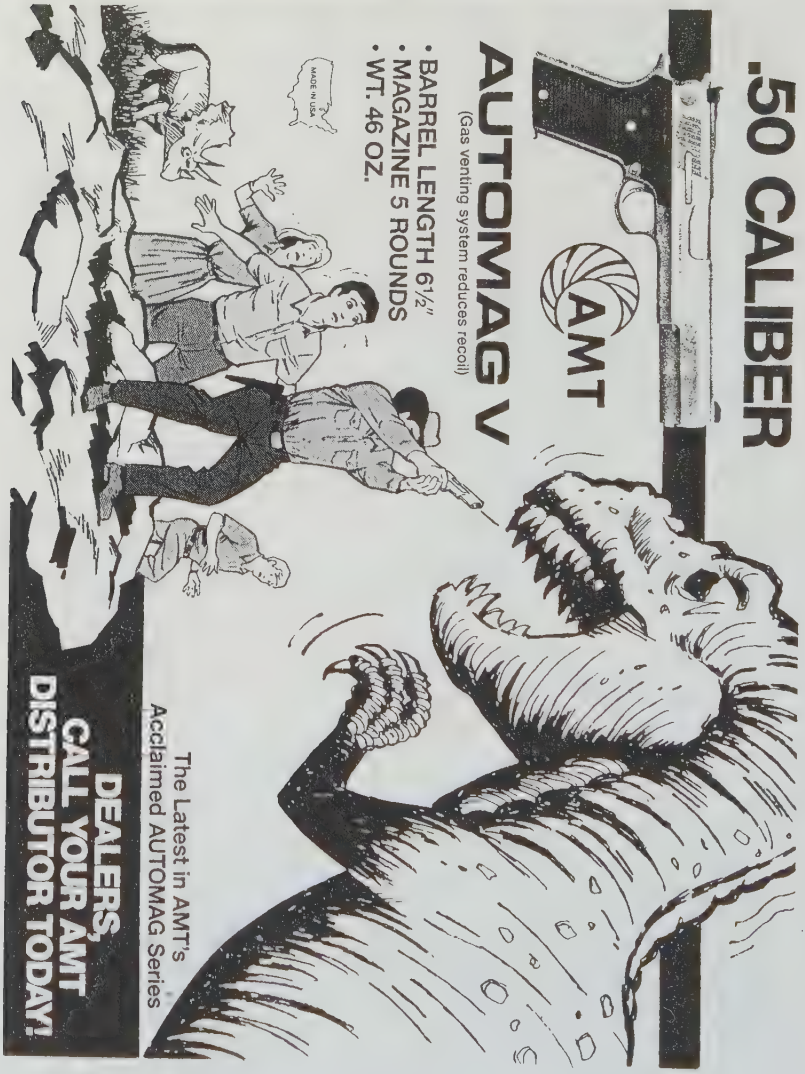


Last of the "berserk shattermelons" has been sent to the great target range in the sky. (Photo courtesy of Magnum Research.)

the rage (and, yes, some shooters even have contests to see who can blast old bowling pins down the fastest). Perhaps one day hand cannon shooters will be seriously competing to see who can blow up the most fruit standing in a line.

Much the same situation will undoubtedly occur in the future as hand cannons continue to grow in popularity and perhaps are employed in ways no one has even imagined today. Will tomorrow's hand cannon become a defensive weapon in addition to a sporting gun? Might superaccurate hand cannons be pressed into service by police or military agencies as compact sniper guns or for knocking out land mines? Will new types of "gaming" hand cannons be developed? And will the upper limits in power be topped with the development of more efficient muzzle brakes or spring-loaded stocks?

Only time will tell. In the meantime, at least one manufacturer would seem to be tooling up for the time when dinosaurs might be brought back á la *Jurassic Park*. In a tongue-in-cheek ad by AMT, an



Indiana Jones-looking character is blasting a Tyrannosaurs Rex with the company's pistol. But is anything too far-fetched in a day and age that seriously talks about cloning wooly mammoths and dinosaurs?

Even though we may never need to defend ourselves from dinosaurs or berserk pumpkins in our backyards, it's a safe bet that as hand cannons become more and more popular, they are going to supply a wealth of fun at target ranges and hunting grounds worldwide.

Suppliers and Manufacturers

APPENDIX

Adventurer's Outpost
P.O. Box 70
Cottonwood, AZ 86326

Aimpoint, USA
Attn: Landon Burke
Herndon, VA 22070

Arcadia Machine & Tool (AMT)
6226 Santos Diaz St.
Irwindale, CA 91702

B-Square Company
Box 11281
Ft. Worth, TX 76110

Behlert Precision
P.O. Box 288, 7067 Easton Rd.
Pipersville, PA 18947

Black Hills Ammunition
P.O. Box 5070
Rapid City, SD 57709

Bausch & Lomb/Bushnell
9200 Cody
Overland Park, KS 66214

Burris Company
331 E. 8th St.
Greeley, CO 80631

Bushnell
9200 Cody
Overland Park, KS 66214

Choate Machine & Tool
Box 218
Bald Knob, AR 72010-0218

DBI Books, Inc.
4092 Commercial Ave.
Northbrook, IL 60062

DPMS (Defense Procurement
Manufacturing Services, Inc.)
408 1st Ave. NW
Osseo, MN 55369

E&L Manufacturing, Inc.
39042 N. Schoolhouse Rd.
Cave Creek, AZ 85331

E. Arthur Brown Company
3404 Pawnee Dr.
Alexandria, MN 56308

E&L Manufacturing, Inc.
39042 N. Schoolhouse Rd.
Cave Creek, AZ 85331

Federal Cartridge Company
900 Ehlen Dr.
Anoka, MN 55303

Freedom Arms
P.O. Box 1776
Freedom, WY 83120

Gun Smoke Enterprises
P.O. Box 2537
Okeechobee, FL 34973-2537

Harris Engineering, Inc.
Barlow, KY 42024

Hogue Grips
P.O. Box 2038
Apascadero, CA 93423

Irwindale Arms, Inc.
6226 Santos Diaz Dr.
Irwindale, CA 92706

Ithaca Gun Company
891 Route 34B
King Ferry, NY 13081

L.A.R. Manufacturing
4133 West Farm Rd.
West Jordan, UT 84088

L.L. Baston Company
P.O. Box 1995
El Dorado, AR 71730

Lee Precision, Inc.
4275 Highway "U"
Hartford, WI 53027

Leupold & Stevens
600 NW Meadow Dr.
Beaverton, OR 97075

M.O.A. Corporation
2451 Old Camden Pike
Eaton, OH 45320

Mag-na-port International
41302 Executive Dr.
Mt. Clemens, MI 48045-34488

Magnum Research, Inc.
7110 University Ave. NE
Minneapolis, MN 55432

Michaels of Oregon Company (Uncle Mike's)
P.O. Box 13010
Portland, OR 97213

Olin/Winchester
427 N. Shamrock
E. Alton, IL 62024

Omark Industries/CCI
P.O. Box 856
Lewiston, ID 83501-9990

PMC (Eldorado Cartridge)
P.O. Box 308
Boulder City, NV 89006-2508

Pachmayr
1875 S. Mountain Ave.
Monrovia, CA 91016

Paladin Press
P.O. Box 1307
Boulder, CO 80306-1307

Ram-Line
545 31-Road
Grand Junction, CO 81504

Remington
Brandywine Building, 1007 Market St.
Wilmington, DL 19898

Rocky Mountain Arms, Inc.
P.O. Box 329
Longmont, CO 80502-0329

R.P.M.
15481 N. Twin Lakes Dr.
Tucson, AZ 85737

SGW/Olympic Arms
624 Old Pacific Hwy SE
Olympia, WA 98503

Smith & Wesson
2100 Roosevelt Ave., P.O. Box 2208
Springfield, MA 01102-2208

Springfield Armory, Inc.
420 West Main St.
Geneseo, IL 61254

Sturm, Ruger & Company, Inc.
200 Ruger Rd.
Prescott, AZ 86301

Tasco Sports Optics
P.O. Box 520080
Miami, FL 33152-0080

Taurus
16175 NW 49th Ave.
Miami, FL 33014

Thompson/Center Arms
Farmington Rd., Box 5002
Rochester, NH 03867

Ultra Light Arms
P.O. Box 1270, 214 Price St.
Granville, WV 26534

Wesson Firearms Company
Maple Tree Industrial Center
Rt. 20, Wilbraham Rd.
Palmer, MA 01069

Wichita Arms
923 Gilbert, P.O. Box 11371
Wichita, KS 67211

Williams Gun Sight Company
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Allan Zitta (Cycle Dynamics, Inc.)
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Like a 1200 cc Harley Davidson motorcycle or an F/A18 fighter jet, "hand cannons" are the biggest, loudest, most powerful handguns in the shooting world. They produce more flash, smoke, and big bangs than conventional pistols, and they fire the famous "fire-breathing" cartridges—from "Dirty Harry's" .44 Magnum to the mammoth .50 BMG.

Duncan Long has fired all of the top hand cannons, and here he describes and evaluates each and every one of them according to their features and characteristics, including the big bolt actions (Pachmayr's Dominator, Remington XP-100), break-opens and falling blocks (BF Pistol, Thompson/Center Contender), revolvers (S&W Model 29 "Dirty Harry," Ruger Super Blackhawk), and semiautomatics (AMT Automag, IMT Desert Eagle). He also reveals how to tame the recoil and muzzle blast and improve accuracy with these massive pistols.

Any handgun that spits out bullets strong enough to bring down large game animals is not for everyone, but if you're interested in the biggest bang for your buck for competition shooting, hunting, or personal defense, you must read *Hand Cannons: The World's Most Powerful Handguns*.

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